a W. R. C. Smith publication

Textile Industries

Formerly "COTTON"

JANUARY, 1956

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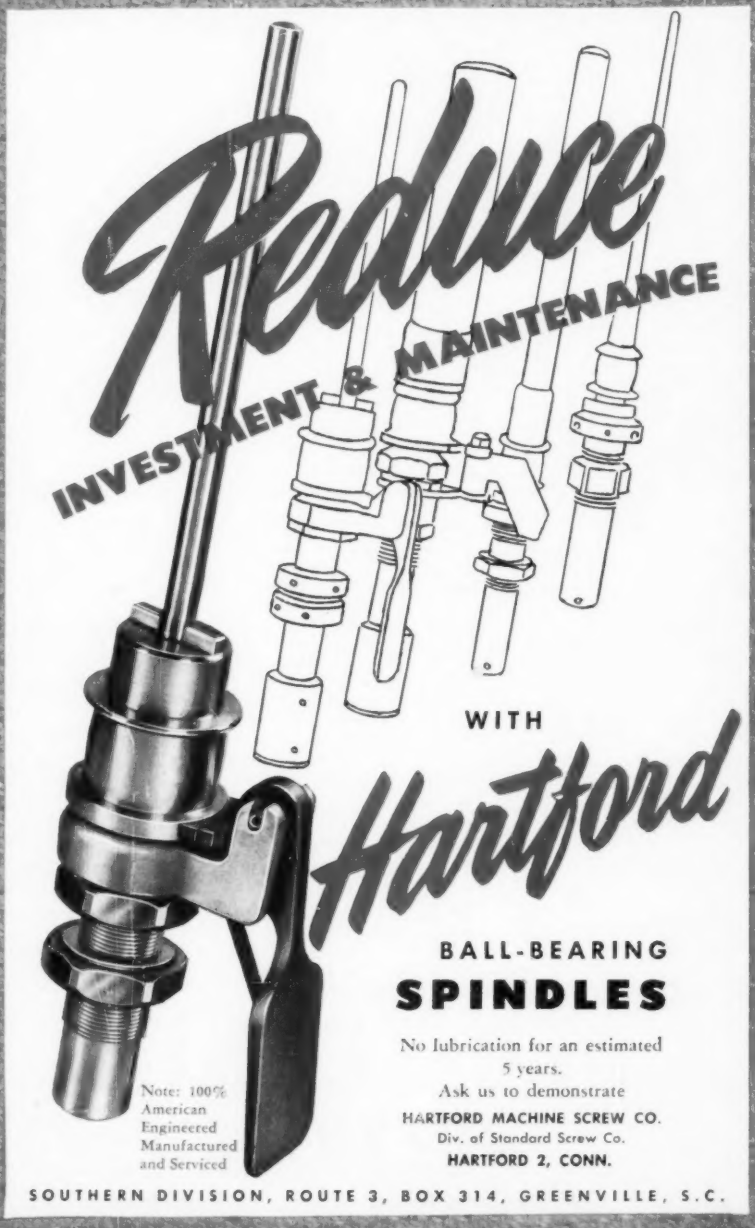
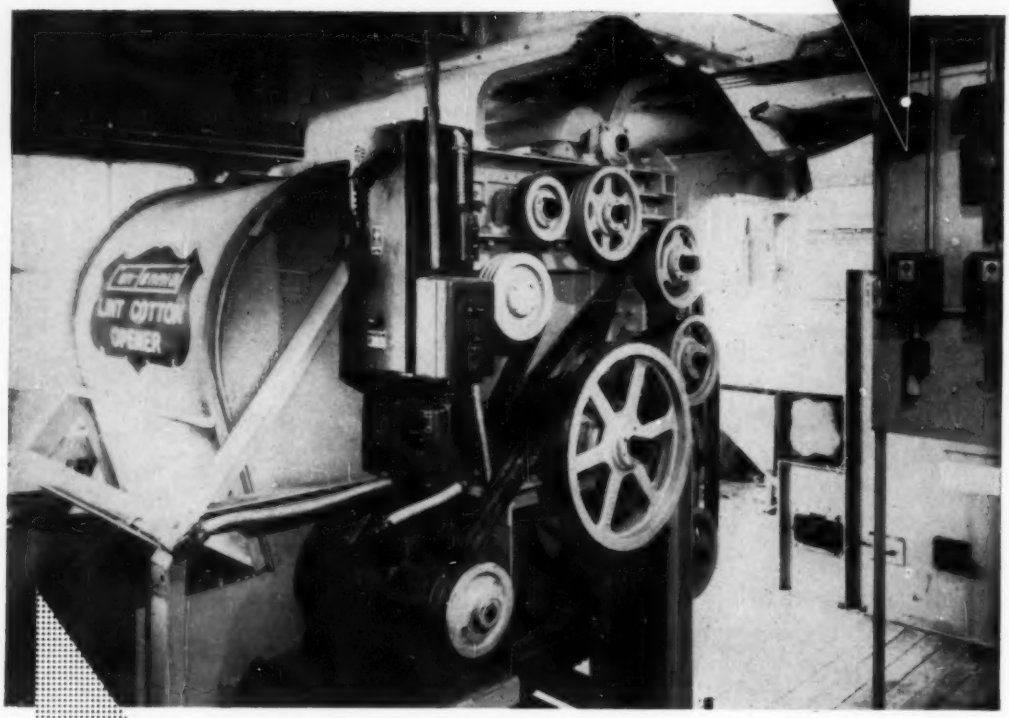


CEN-TENNIAL IN ACTION AT WEST BOYLSTON...



CEN-TENNIAL TEXTILE FIBER OPENER!

West Boylston Manufacturing Company, Montgomery, Alabama, manufacturers of quality yarns, is another mill which has installed CEN-TENNIAL TEXTILE FIBER OPENERS.

Always an organization with an eye toward more efficient operation, the management at West Boylston installed CEN-TENNIAL OPENERS as a means of materially reducing fiber waste and improving quality of yarn.

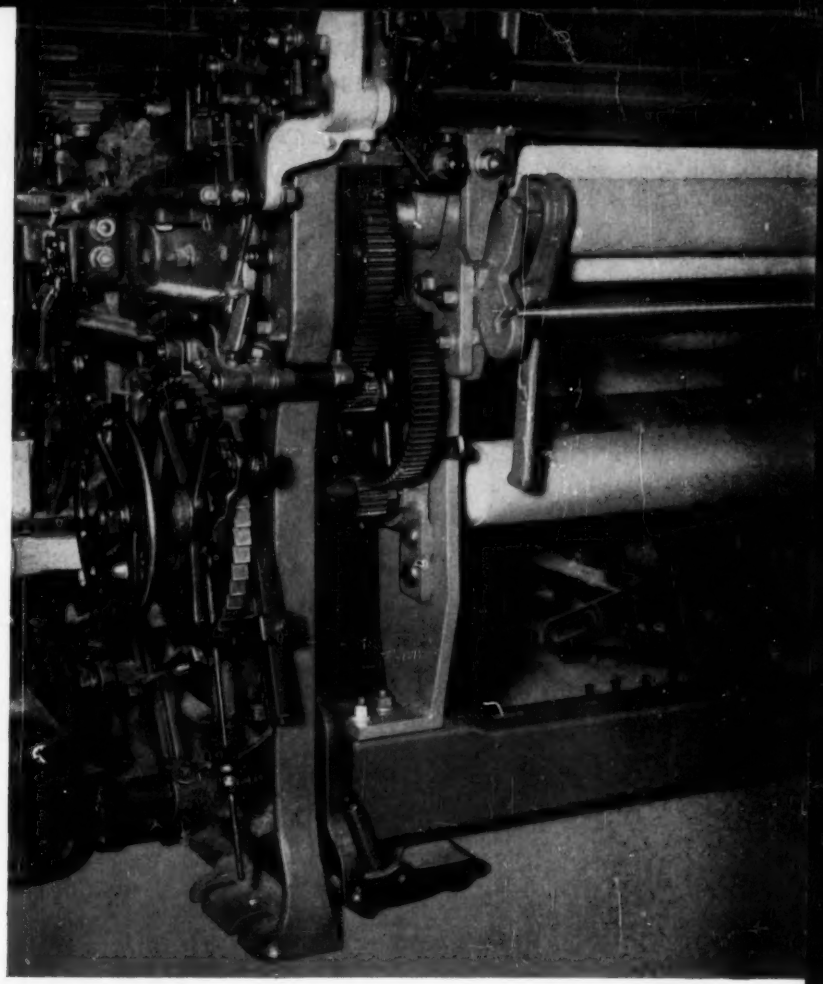
West Boylston has equipped all of their opening lines with the CEN-TENNIAL OPENER as a result of the efficiency of the initial installation.

The CEN-TENNIAL OPENER can save waste and save dollars for you, too, no matter what system your mill is running. It opens, cleans and blends cotton, wool and synthetics. Inquire for further information today, using the postage-paid reply card on page 163.

CEN-TENNIAL
COTTON GIN COMPANY

Columbus, Georgia U.S.A.

INCREASED LOOM VERSATILITY, EASIER DOFFING WITH NEW DRAPER TAKE-UPS

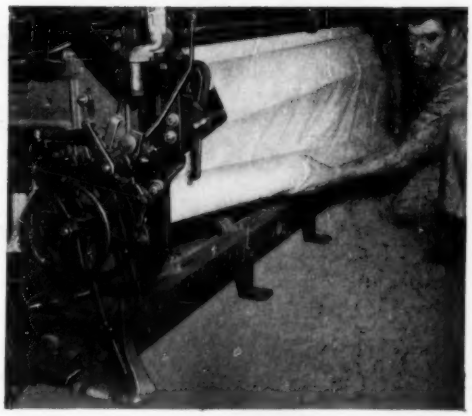


New Draper High Roll Ratchet Take-Ups now make it possible to weave synthetic goods on X-2 Model Looms.

These Take-Ups are equipped with Double Take-Up Rolls providing increased frictional surface to hold the cloth in weaving spun and filament yarns.

A separate wind-up, chain and sprocket driven from the lower Take-Up Roll, permits easy doffing. The use of a Cam Lever type Pressure Roll permits the Cloth Roll to be doffed without stopping the loom.

For application of new Draper Take-Ups and other labor saving devices consult your Draper representative . . . *today*.



New type Pressure Roll permits doffing without stopping the loom.

DRAPER CORPORATION

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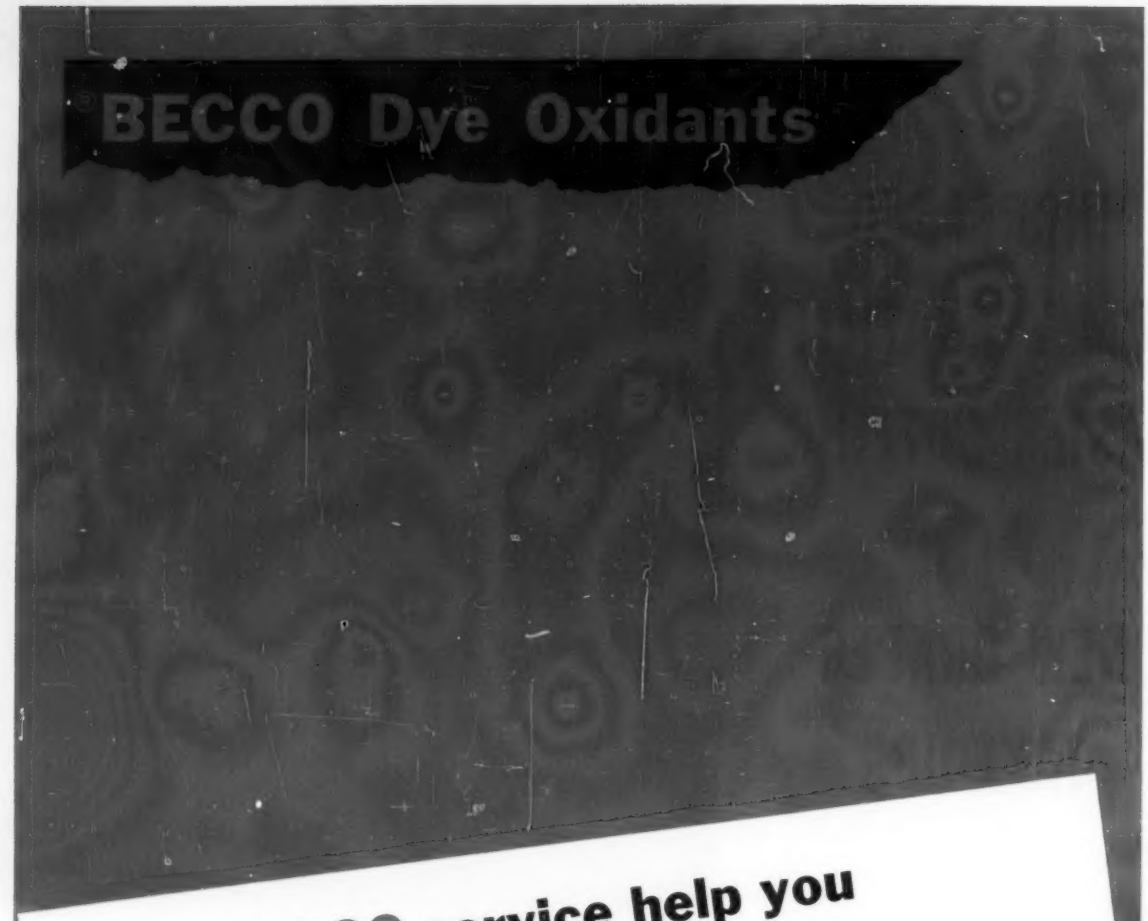
ATLANTA, GA.
GREENSBORO, N. C.
SPARTANBURG, S. C.



Can BECCO service help you with oxidation of sulfur colors or oxidation of vat dyes?

You can ask for Becco's trained engineers and chemists to help on your dyeing range or in your laboratory.

You will find tested methods—clean, fast and simple—described in Becco bulletins on oxidation of vat dyes with hydrogen peroxide or sodium perborate; on oxidation of sulfur dyes with ammonium persulfate.

You can count on prompt delivery by tank car, truck or drum of Becco chemicals of high purity and reactive effect.

Among interesting Becco bulletins available on request are:

2. Hydrogen Peroxide
38. Oxidation of Vat Dyes on Cotton and Synthetics with Hydrogen Peroxide
45. Sodium Perborate
49. Ammonium Persulfate

Ask for Becco Bulletins by number.

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FOOD MACHINERY AND CHEMICAL CORPORATION

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BUFFALO • BOSTON • CHARLOTTE • CHICAGO
NEW YORK • PHILADELPHIA • VANCOUVER, WASH.

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Textile Industries

Formerly "COTTON"

Vol. 120, No. 1
January, 1956

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Manufacturers of Letter Convolute and Spiral Wound Cloth Tubes, Carpet and Rug Cores, Yarn Tubes, Cloth Winding and Baling Boards, Beaming and Carlining Paper.

Prompt delivery by our own fleet throughout the South and Southwest.

Shorts and Remnants

By J. C. C.

► A happy and prosperous New Year to each and every reader of S&R. May 1956 bring you all happiness and prosperity.

► Old S&R, having noticed all of the football predicters and prognosticators, goes out on a limb to predict for 1956:

Continued world peace with only minor outbreaks;

Further price strengthening for textiles as a whole;

At least 10% increase in textile production — considerably more than this increase in plant modernization and expansion;

Continued increases in stretch yarns, in added synthetic fibers and added uses for existing fibers;

Additional mergers and integration in all textiles;

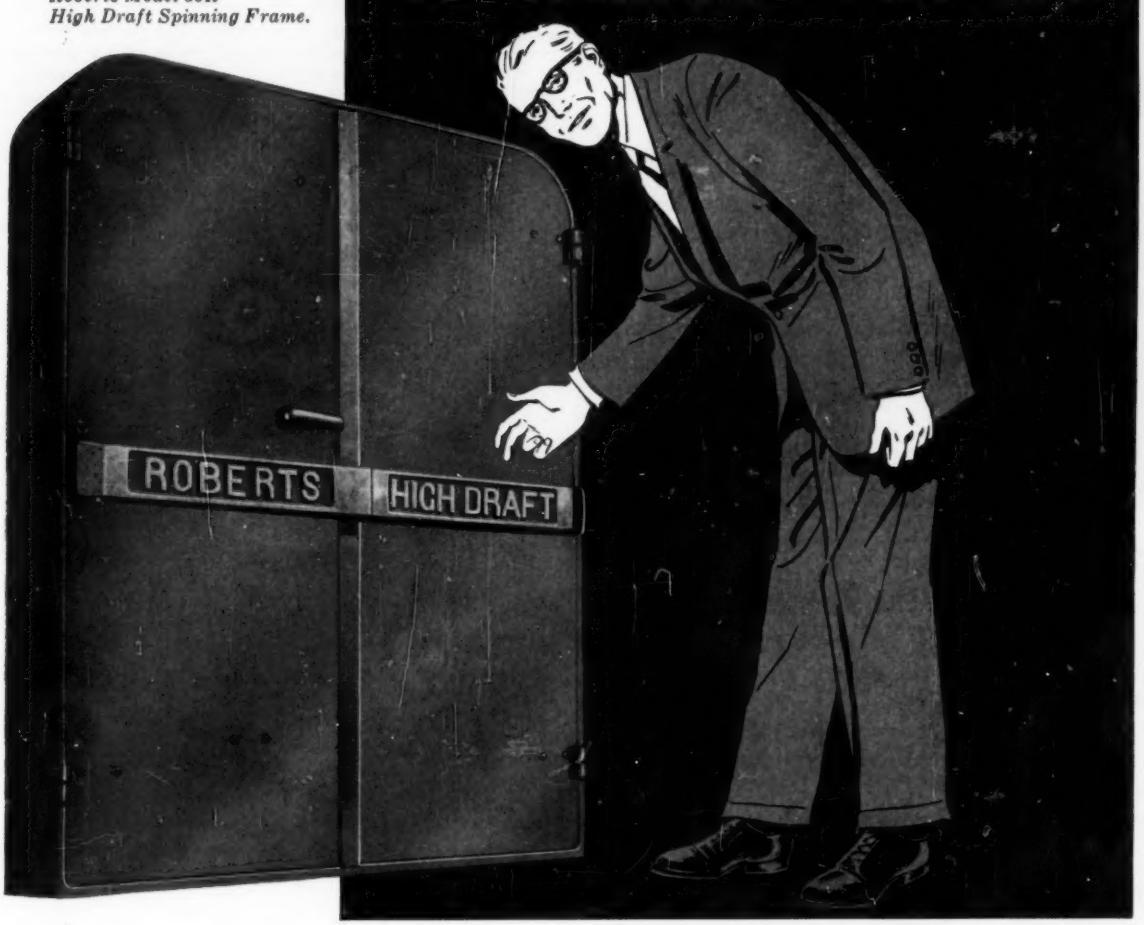
Further movement to South, especially in hosiery and finishing.

► A turn of the year press item says that Japan is limiting textile exports to the U.S.A. Now that is an angle that nobody seemed to think of. S&R said there were three ways to meet the foreign competition threat: (1) Lend them enough money to buy their own output; (2) establish wage and hour laws in the competing countries; (3) keep tariffs low, but not take any. Even we didn't figure the home base angle.

► Before we get through with the New Year, let's all turn over a new leaf and make some good resolutions. We might even improve on this here column, according to a few critics here and there. One reader (we have several) thinks we pay too much at-

OPEN THESE DOORS TO SPINNING PROFITS

Shown below is head end of Roberts Model 55R High Draft Spinning Frame.



AVAILABLE IN THE FOLLOWING FORMS:

- *Partial or complete changeovers on mill's existing frames.*
- *Completely modernized Model 55R Roberts High Draft Spinning in 3", 3¼", 3½" or 4" gauge.*
- *All-new Model 56 Roberts High Draft Spinning Frames.*

- **LARGER ROVING PACKAGES IN CREELS**
- **LONGER LIFTS ON BOBBINS**
- **LARGER RING SIZES**
- **HIGHER DRAFTS**
- **HIGHER FRONT ROLL SPEEDS**
- **REDUCED ROLL PICKING**
- **LOWER OILING COSTS**
- **GREATER BREAKING STRENGTHS**
- **BETTER YARN EVENNESS**
- **REDUCED ENDS DOWN**
- **INCREASED SPINDLES PER OPERATOR**

ROBERTS COMPANY
SANFORD, NORTH CAROLINA

GIVE YOUR OLD FRAMES A SHOT-IN-THE-ARM
with **MEADOWS BIG-PACKAGE MODERNIZATION**

We can make your old frames sit up and take notice. For a quarter of a century we've been converting spinning and twister frames making them do things they never were designed to do; making them pay off as nobody ever suspected they could. We can give you the big packages you've been dreaming about. We can rebuild your frames from floor to creel. And it "ain't gonna hurt much" considering the good it will do—profitwise.

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Shorts and Remnants

tention to Geiger Counters. Maybe he is the same one who sent us that department store ad from Charlotte featuring Geiger Counters, and he is tired of it all. However, we may be on the right track. North American Philips' Publicity Dept. seems to think so. This month it's a ratemeter, a predetermined count scaler, and a new MG160-D X-Ray Unit. Somebody up there thinks our textile readers are hot after uranium.

► But then we get lots of hot textile items from these publicity departments, such as the one we'll use to get 1956 off to a good start. Seems that the lass below has a bottle of new Glamorene Liquid Rug and Upholstery Cleaner in her hand which

should be very interesting to all of our rug cleaner readers.

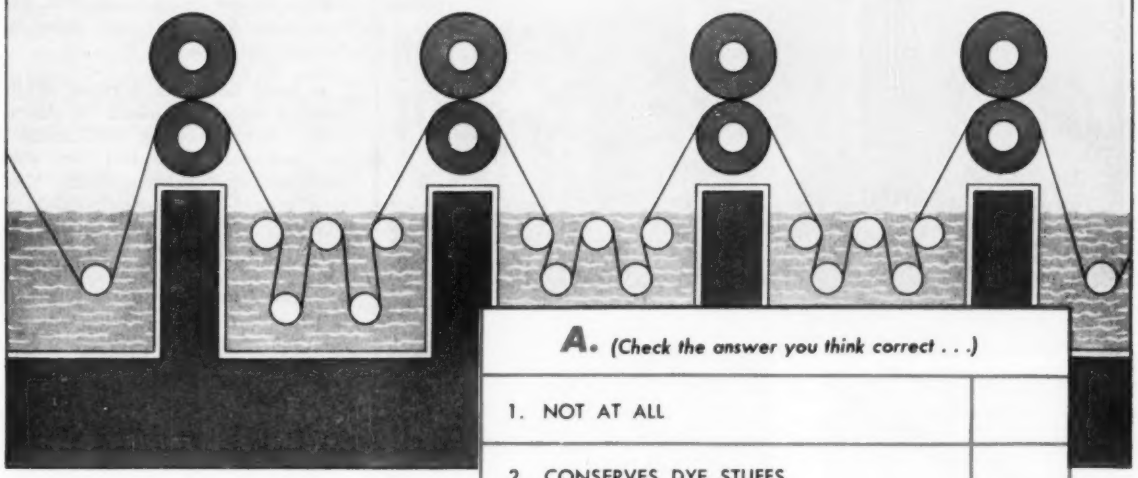
► Another publicity man writes us that one of his factoring accounts has completed a "gigantic" study of the curtain, drapery, and bedspread manufacturing industry and that he is offering a report of it to us exclusively for our "edification and delight" (regretfully declined by our editors).

► Some industrial publicity we like, though. Our editors liked so well the Burlington Industries Cramerton Plant effluent line story as carried in this issue and as written by **William E. McFee**, Product Information Service, Armco Steel Co., that they wrote Mr. McFee complimenting him. Mr. McFee replied that " . . . there are

STOWE-WOODWARD Maintenance Tips

for better finishing at lower cost

Q. HOW DOES RUBBER ROLL CARE AFFECT CHEMICAL COSTS?



A. *(Check the answer you think correct . . .)*

1. NOT AT ALL	
2. CONSERVES DYE STUFFS	
3. ELIMINATES EXCESS NEUTRALIZING OPERATIONS	

You'll find the correct answer in these Maintenance Tips

If you checked answer #1 you may be overlooking one of the most important contributions that fine rubber covered rolls can make toward reducing costs. Actually answers #2 and #3 are both correct.

In modern high speed range finishing operations, where the cloth passes from dyestuff into washers or chemical baths, the carry over of dye, or chemicals into the next succeeding bath is determined by the effectiveness of the squeeze rolls. It goes without saying that the greater the volume of excess fluid removed by the rolls, the less the carry over and the less the contamination of the next bath. In many mills it is necessary to add chemicals to the water to neutralize the effects of carry over; and savings in the amount of these chemicals, necessary to purify the bath, can also be achieved through the use of efficient squeeze rolls.

Your Stowe-Woodward sales engineer will be glad to help with any problem regarding the care, selection or use of rubber covered rolls.

"RUBBER ROLLS with a REPUTATION"

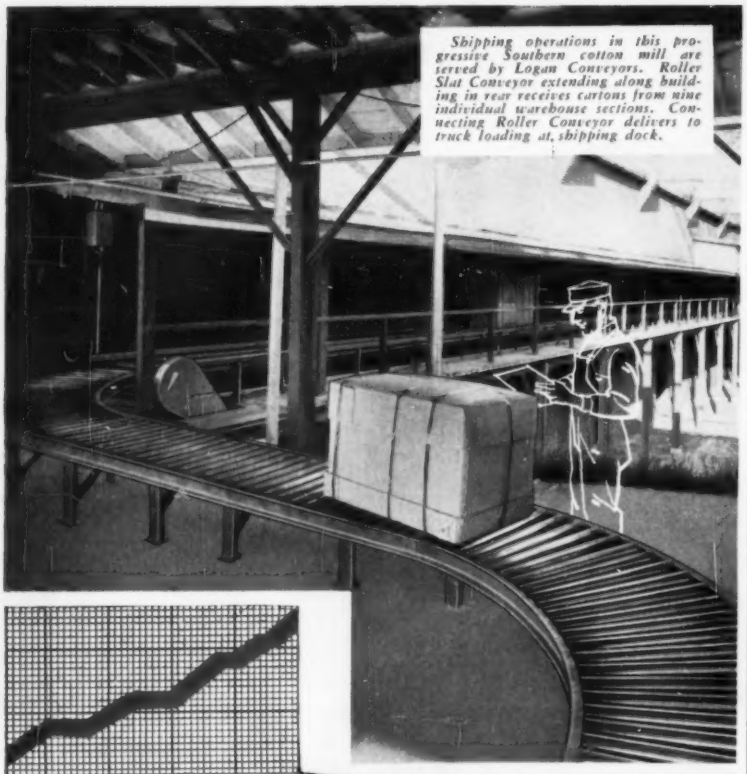
S-W INC.

STOWE-WOODWARD, Inc.

Craftsmen in rubber rolls

NEENAH, WISCONSIN • NEWTON 64, MASS. • GRIFFIN, GEORGIA

For further information use Handy Return Card, Page 163



Shipping operations in this progressive Southern cotton mill are served by Logan Conveyors. Roller Slat Conveyor extending along building in rear receives cartons from nine individual warehouse sections. Connecting Roller Conveyor delivers to truck loading at shipping dock.

The LEADERS use Logan

Large business or small . . . you can be a leader in your field, with a properly equipped plant. The nation's foremost industries use Logan Conveyors as part of their equipment for (a) greater speed in production, (b) greater capacity in the same plant, (c) the ability to make quicker deliveries, (d) the conservation of man power, (e) the maintaining of satisfaction among workers. Put Logan to work for you, too. Write for nearest engineer or for further information.

LOGAN CO., 206 CABEL ST., LOUISVILLE 6, KY.

Logan Conveyors

Shorts and Remnants

many earnest, conscientious men at work today in the field of industrial publicity . . . there are a few editors like you who recognize the useful service we are trying to perform, and it renews our faith and gives us further incentive. . . . "

► Good news for textiles. While walking only two blocks in downtown Atlanta recently, S&R counted six men with vests and two with caps (the old-fashioned kind!). Who says styles don't change? Think of the additional fabric that would be required if every man started wearing vests. Or, for that matter, think of the increased demand for textiles if the women took to hoop skirts and multiple petticoats again.

► Speaking of fashions, the Wool Week publicity folks sent this picture of two models perched on bales of

raw wool recently unloaded at Port of Charleston, South Carolina, where the above week was celebrated Nov. 7-12. In case you didn't notice, that is a Hyster fork lift truck they are all loaded on and Hyster is a good T.I. advertiser.

► Philadelphia Textile Institute and Whitin Machine Works both wrote in for some back issues to complete bound volumes. When we have them, T.I. is always glad to furnish back copies without charge.

► Speaking of hoop skirts, a card from **H. H. White**, Atlanta, Ga., offers repair service for water wheels. We remember the water wheel ads in our pages when every mill had to be on a stream.

► **Irving Smilowitz** of Binstron,

HAYES INDUSTRIES, INC.

The World's Largest Producer of Light Metal Beams

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CANADIAN REPRESENTATIVE:
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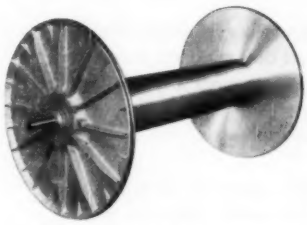
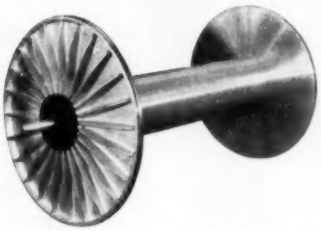
Montreal, Canada

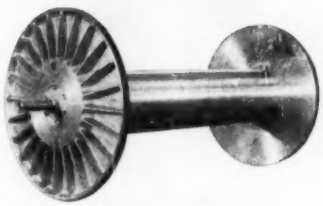
HAYES LIGHT METAL BEAMS cut costs in modern textile production, and help toward *higher profits* due to true running, perfect balance, elimination of snagging or catching with the highly polished finish of inside head faces, rust-proof construction, low maintenance costs, and fewer fabric rejects. Illustrated are only a few of HAYES LIGHT METAL BEAMS for standard production purposes. Our skilled engineering staff can help you. *Write, phone, or wire us your problem today.*



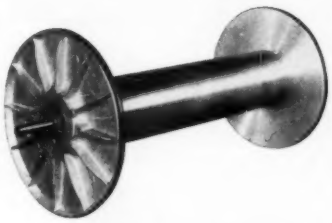
HAYES 38" x 54½" Aluminum Section Beam for cotton and spuns. Lightweight 207 lbs. Capacity, net weight of yarn 1,050 lbs.



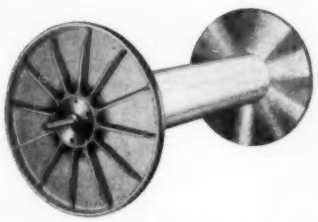
HAYES 36" x 54½" Heavy Duty Aluminum Section Beam for acetate, spuns, and cotton. Can be adapted to all standard warpers.



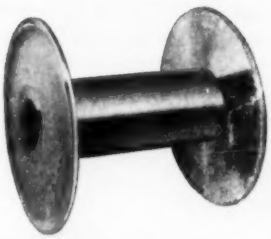
HAYES Heavy Duty Section Beam for nylon. Can be furnished in 30" and 32" diameter heads. Barrel diameter 11¾". ½" minimum wall.



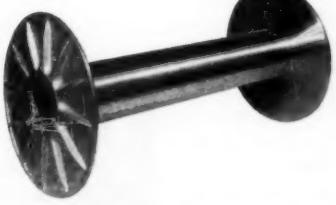
HAYES Bolted Type Section Beam for acetate. 30" x 54¼". 11¾" diameter barrel. Can be adapted to all standard warpers.



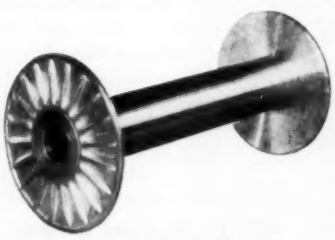
HAYES Aluminum Section Beam for acetate. Screwed type. Head sizes 26", 28", 30", 32". 54¼" traverse. 11¾" diameter barrel. Can be adapted to all standard warpers.



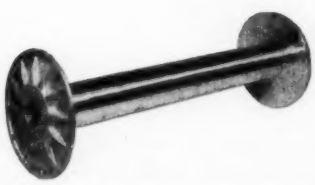
HAYES 21" Aluminum TRICOT Beam for nylon. Barrel size 7¾" diameter. Head thickness 1". Furnished in ⅜" and ½" wall. Bored for 4½" shaft. Keyways 9/16".



HAYES 21" Aluminum TRICOT Beam for acetate. Barrel 7⅜". Head thickness 1". Any desired traverse. Bored for 4½" shaft. Keyways 9/16".



HAYES 21" Heavy Duty Forged Head Aluminum TRICOT Beam for nylon. Head thickness 1¼". Barrel 7¾". ½" wall. 39-7/16" traverse. Bored for 4½" shaft. Keyways 9/16".



HAYES 13¾" diameter Aluminum TRICOT Beam for acetate. Barrel size 4.925" diameter. Made in head thicknesses of 39/64" and 1". Traverse dimensions to suit. Bored for 2¾" shaft. Keyways 9/16".

HAYES manufactures a variety of Aluminum Loom Beams to fit Draper, and Crompton & Knowles looms, for acetates, spuns, and nylon. These can be manufactured with fixed or adjustable heads in sizes from 22" to 32" diameters.

For more than 50 years SONOCO precision paper products have meant

Plus Value

CONES

Available with various surfaces, inside and outside printing, notches, scores, perforations and in many nose and tip designs. Lacquer tipping, dyed base and tip, and striped base can be furnished for yarn identification.

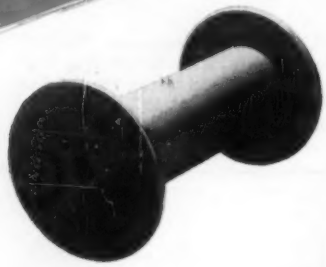
because . . .

SONOCO is constantly striving to improve present products and conducts a continuing program of research and development to meet the needs of an ever-changing textile industry.

SONOCO paper products have become "standard of the world" wherever textiles are made . . . a "plus value" advantage which has resulted in industry-wide benefits.

TUBES

Spiral, convolute, parallel or drawn construction from ⅛" to 36" I.D., in any practical length and wall thickness—for every textile need! Available in colors, various surfaces, treated, impregnated, perforated, scored, notched, printed, with crimped or burnished ends.



SPOOLS

A complete variety of standard sizes, or made to your order. Available with plain, printed and treated heads. Also standard and special tapered base single head thread spools in fibre and plastic.

Consult our sales-engineers or write us direct!

SONOCO PRODUCTS COMPANY

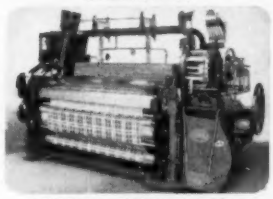
MAIN OFFICE — HARTSVILLE, S. C.

MYSTIC, CONN. • AKRON, IND. • LOWELL, MASS. • PHILLIPSBURG, N. J.
LONGVIEW, TEXAS • PHILADELPHIA, PA. • LOS ANGELES, CAL.
GRANBY, QUEBEC • BRANTFORD, ONT • MEXICO, D. F.

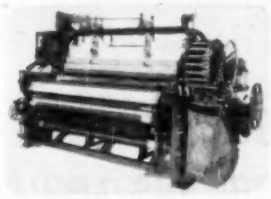
DEPENDABLE SOURCE OF SUPPLY

M-P 20 Harness (½" space) 2 x 1 box
AUTOMATIC FILLING MIXING HEAD LOOM

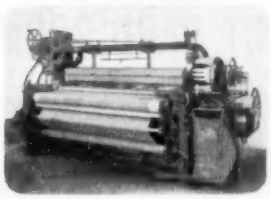
M-P 4 Harness 2 x 1 box AUTOMATIC
UNDERCAM LOOM



M-P 20 Harness (15/32" ga.) 4 x 1 box
AUTOMATIC DOBBY LOOM



M-P 20 Harness (15/32" ga.) 2 x 1 box
AUTOMATIC DOBBY LOOM



M-P 25 Harness (4/10" space) 4 x 1 box
AUTOMATIC HEAD LOOM

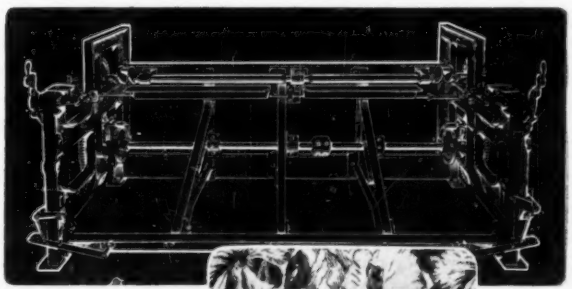
YOUR FABRIC-CONSTRUCTIONS CAN BE "*TURNED ON A DIME*", TOO...

WHEN YOUR WEAVEROOM IS **M-P** EQUIPPED

Sudden turns of fashion can't throw your balance-sheet off balance . . . when your weaveroom has the Many-sided Protection of C & K's new Multi-Purpose Looms.

For, with an adequate complement of these unique looms, you can literally "turn on a dime" . . . *convert overnight from plain to fancy constructions, or vice versa.*

C & K's new M-P design is the first to give this *complete convertibility* . . . which means More Protection and More Profit than you have ever had before. *See C & K today.*



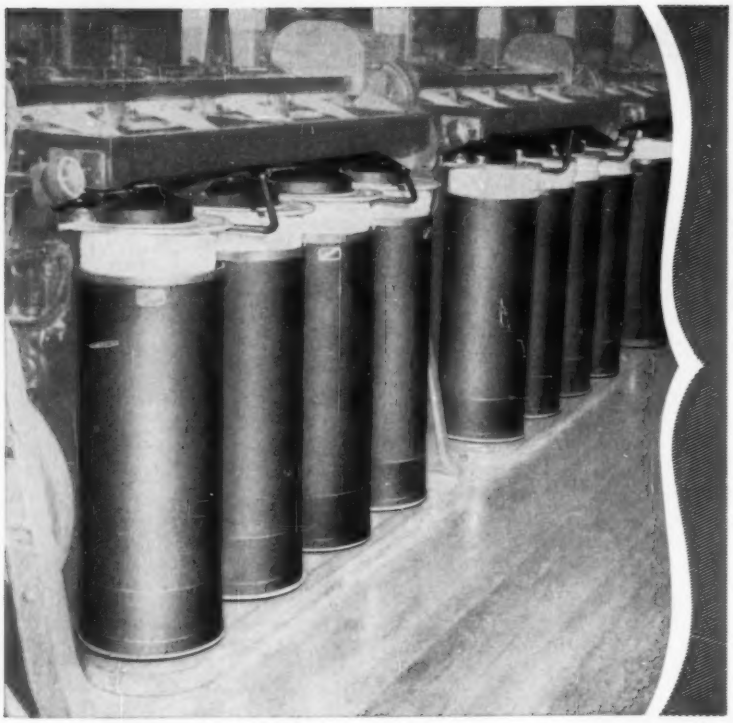
This "Invisible Trademark" Stands Back of the Trademarks of the World's Finest Fabrics . . . which are WOVEN Fabrics.

CROMPTON & KNOWLES *Loom works*

WORCESTER 1, MASSACHUSETTS, U. S. A.

Charlotte, N. C. • Philadelphia, Pa. • Allentown, Pa.

Crompton & Knowles Jacquard & Supply Co., Pawtucket, R. I.



HOW SOUTHERN STATES COMPLETE COILERS AND CONVERSION UNITS CUT CARD ROOM OPERATING COST

Mill case histories prove over and over that Southern States coiler conversions pay for themselves in less than a year!

Adding up to lower operating costs and savings you can see are—larger cans with increased capacity . . . renewed life of old coilers, longer life of new coilers . . . lower maintenance costs . . . smaller parts inventories . . . simplified, more efficient handling . . . plus improved quality.

Recognizing that each mill is faced with different problems, Southern States has produced the most complete line of coiler and coiler conversion units available to the industry. Thus, regardless of sliver handling methods, or condition of existing equipment, Southern States makes it possible for your mill to enjoy all the advantages of larger cans at a price you can afford.

Complete details are in our Bulletin 201, which we'll send on your request. Better still, let our representative show how Southern States conversions can cut your card room costs.

SS®

SOUTHERN STATES

EQUIPMENT CORP.

HAMPTON, GEORGIA

Shorts and Remnants

Inc., New York, N. Y., wanted a copy of Helanca panty article [Oct. '54]. **J. A. Martin,** Duplan Corp., Kingston, Pa., wrote for reprints of "Bulked Yarn Problems Can't Be Solved by Traditional Methods" [Oct. '55]. **C. W. Johansson,** Boras, Sweden, wanted addresses of Chadolon, Inc., Blackwelder Textile Co., and Deering-Milliken Research Trust. **W. M. Neuman,** Supt. A & M Karagheusian, Inc., Roselle Park, N. J., requested about a dozen reprints of "Too Many Ends Down In Spinning" [Aug. '55].

► Several good comments on "Is Compressed Air Costing Too Much In Your Mill?" [Oct. '55] indicated a heap of interest in air compressors and air systems. Air compressor, hose, etc., manufacturers, please note.

► **Thos. E. Weston,** Elizabeth City, N. C., wanted a knitting machine table on which to install knitting machines.

► **Warren Woo,** senior at N. C. State, wanted literature on automation for textiles, which is nothing new because textiles have had automation since early beginnings and we have reported on same for 57 years. **T. F. Sullivan,** V.P. Duesberg-Bosson of America, Inc., Jefferson, Mass., wanted to get in touch with the author of "Open Letter to Woolen Card Builders" [Oct. '55], so we forwarded his letter on to CONTRIBUTOR No. 8812, whose identity—like all others in the "How Other Men Manage" department — is not revealed without permission.

► So you see business goes on as usual here at T.I., and if you have any compliments or complaints send them. We'll publish the compliments.

Article Drawing Inquiries

"The item on Selas textile singeing equipment in your November, 1955, issue is already drawing inquiries. . "

HOWARD NEHR
Selas Corporation of America
Philadelphia, Pa.

Somebody Is Reading This Magazine

"I want to personally thank you for the requests for further information on our Identa-Lite [Nov. '55] . . . I do not know when we have received

such a concentrated number of inquiries. This must mean that somebody is reading your magazine and that you have found out where and who is interested in improving their process. . . . "

PETER S. GILCHRIST, JR.
Charlotte Chemical Lab., Inc.
Charlotte, N. C.

► Pete, thank you, and we hope somebody who is interested in improving their process keeps reading it.

Art Shaw, Take A Bow

Speaking of compliments, a good New England advertiser writes of our Adv. Mgr. up that way, and a veteran of over 30 years, " . . . he seems to be a fine representative, a man of the highest integrity, a delightful host

Art Shaw

when we have shared his hospitality, and a person whom it is an honor to have as a friend. . . His observations about our advertising policy, programs, plans, and necessities have always been sound, thoughtful, and constructive. . . . "

Electrostatic Flocking Inquiry

"We notice the article on electrostatic flocking equipment [Oct. '55]. . . . We would like to secure additional information. . . . "

JOHN COONEY, JR.
Cellusuede Products, Inc.
Rockford, Ill.

► This New Equipment Item of Arno H. Wirth, AM Heilbrunnen, Reutlingen, Germany, drew numerous requests, some by letter and others by the handy yellow inquiry card. We hope *you* are using this card.

Fire Extinguishing System

" . . . Could you please give us the address of the manufacturer who . . . offers Automatic Fire Extinguishing System under the name of West Boylston Manufacturing Company [Aug. '55] . . . "

PAUL ADLER
Israel Corp. of America
New York, N. Y.

► For information of Mr. Adler

SOUTHERN STATES NOW OFFERS A FOUR-WAY COMBINATION TO BETTER CARDING OPERATIONS

No mill need put up with hot, leaky, rattling comb boxes, hard-to-align comb blades with distorted fingers, out-dated off end bearings, or antiquated coilers with small cans. Not when Southern States has a four-way answer to all of those problems and at prices every mill can afford!

One. Ball-bearing, sealed-for-life Comb Boxes that operate smoothly, quietly and never run hot.

Two. New Aluminum Comb Stock with solid blade support. Light in weight, yet more rugged than conventional steel. End journals of steel simplify balancing and assure long life. True alignment is easy. No distortion between fingers.

Three. Vibrationless Off End Stand. Pre-lubricated sealed bearing eliminates oiling. Mounts either right or left hand.

Four. Universal Coiler Head for 14- or 15-inch cans for use on any make coiler. Simplified design. Cut tooth gears and oilite bearings throughout.

These Southern States units will bring vastly improved carding operations to your mill and cut operating costs. Facts and figures, based on case histories, will prove how they pay for themselves in record-short time. Let our representative give you the details, or write us direct.

SS
SOUTHERN STATES
EQUIPMENT CORP.
HAMPTON, GEORGIA

REPUTATION

Is Mighty Important To The Modern T-Formation Quarterback

In these modern football days, the T-Formation Quarterback handles the ball on every play. It's important that his teammates have confidence in his ball-handling and signal calling!

It's also important to choose the electrical contractor with the best reputation to handle electrical projects in your mill. J. M. Clayton Co. has the reputation and the know-how . . . you'll hear the name mentioned wherever quality electrical contracting is being discussed.

J. M. CLAYTON CO.

CONTRACTING ELECTRICAL ENGINEERS

ATLANTA, GEORGIA

Shorts and Remnants

and other inquirers, the fire extinguishing system referred to is made by Wheelco Instruments, Division of Barber-Colman Co., Rockford, Ill.

"Textile Schools"

" . . . We have also found of particular interest an article on America's Textile Schools [Apr. '55] . . . "

G. P. DINGELDEIN
Burlington Industries, Inc.
Greensboro, N. C.

► Reprints of this one are still available.

"Weaving Defects"

"Would it be possible for us to obtain 6 reprints of a series of articles covering 'Weaving Defects' [May, June, July, Aug., Sept., Oct., Dec. '55] . . . "

H. M. PONTEFRACT
Supt. Hockmeyer Bros. Inc.
Lowell, Mass.

► Several inquiries like this have come in, but this series has not been reprinted yet. Hold your horses. It may be. So let us know if you want copies.

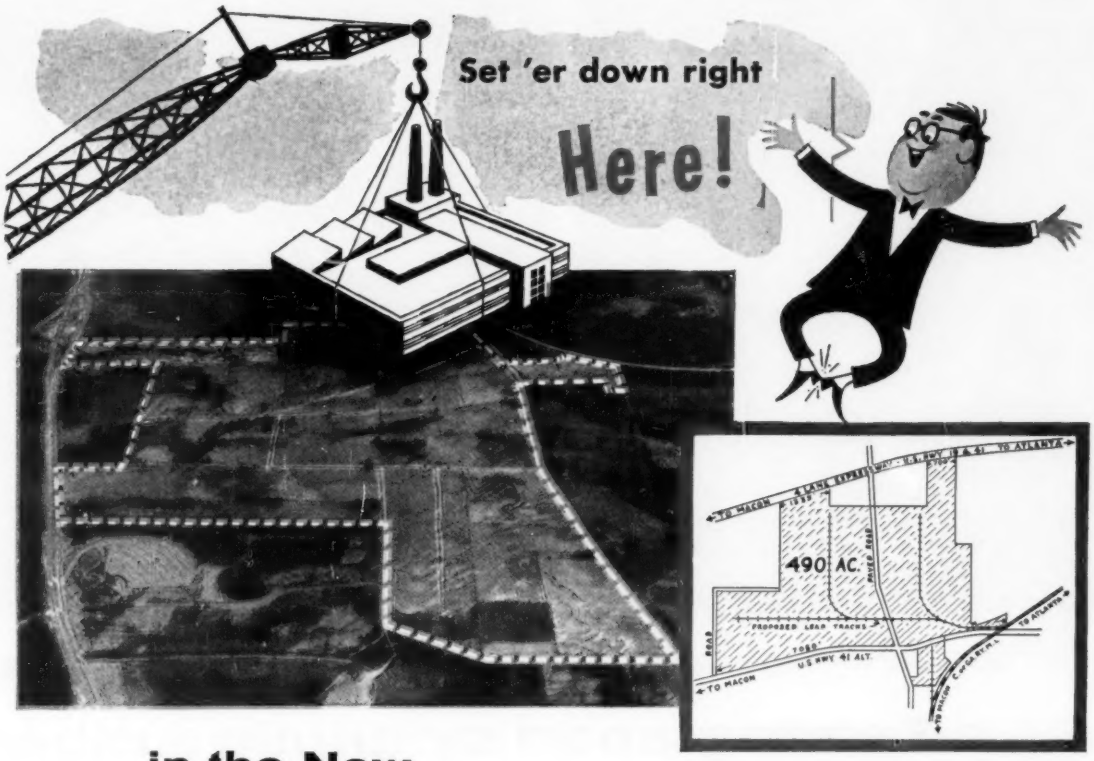
Yes, We Do

"Do you publish some kind of a magazine dealing with Textiles."

W. G. WEATHERLY
Empire Industries Co., Inc.
Lewiston, Idaho

► What about that! We thought everyone knew about T.I. with the largest and most responsive mill readership of any textile magazine.

Watch for the PURCHASING review in February. We'll be seeing you.



in the New

Central Industrial District

at Atlanta, Georgia

The Right Way . . .

CENTRAL OF GEORGIA RAILWAY

INDUSTRIAL DEVELOPMENT DEPARTMENT

1212 RHODES-HAVERTY BUILDING
ATLANTA 3, GEORGIA

Set *your* new plant where industrial development is *planned*—on this ideal site at Atlanta, Georgia! All the convenience of an urban location, with plenty of elbow room for profitable plant operation and *growth*.

The concentration of industries in this planned district will cut your construction, utilities, and maintenance costs . . . reduce distribution expenses.

Competent labor—with highly adaptable skills—is plentiful and stable, willing to give a day's work for a day's pay. Business, labor, and local government are friendly to new industry, offering wholehearted cooperation in establishing a profitable plant or warehouse in this *Central Industrial District at Atlanta, Georgia.*

You can count on Central of Georgia's Industrial Development Department for friendly help, too. Just mail the coupon—in strict confidence—for maps and detailed information.

- **490 acres of level terrain.**
- **Located at Atlanta, Georgia—distribution center of the Southeast.**
- **Gas, water, sewerage, electricity, streets, etc., available at site.**
- **Fronting on 4-lane Expressway (U. S. Highways 41 and 19).**
- **Fast, dependable freight service to all markets via Central of Georgia Railway. All-diesel freights daily between principal communities of the Southeast connecting with 15 major railroads and with Seatrain at Port of Savannah.**

MAIL THIS COUPON TODAY

CENTRAL OF GEORGIA RAILWAY COMPANY
INDUSTRIAL DEVELOPMENT DEPARTMENT
Department F
1212 Rhodes-Haverty Building—Atlanta 3, Ga.

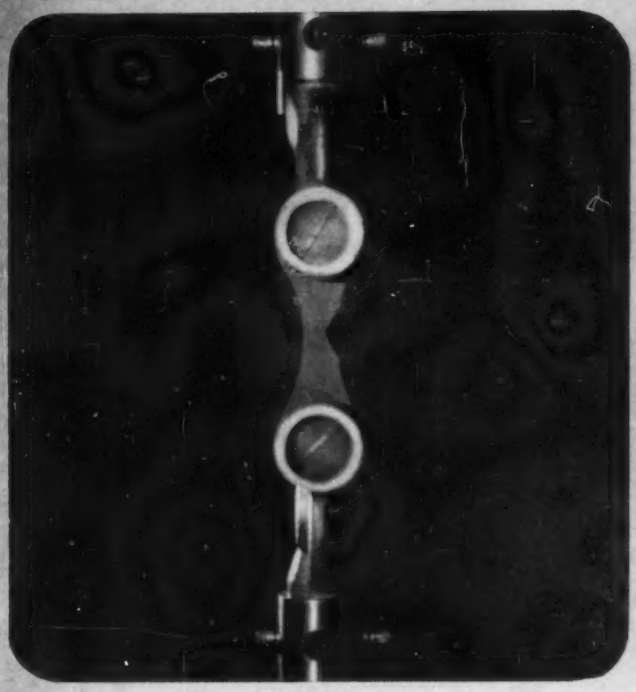
I'm interested! Rush me the facts on the Central Industrial District at Atlanta right away.

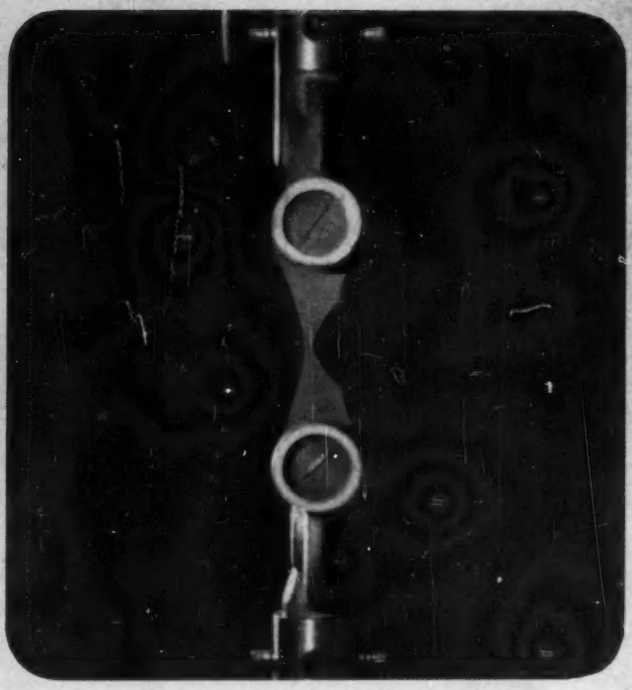
Name_____ Title_____

Company_____

Street or Box No._____

City_____ State_____

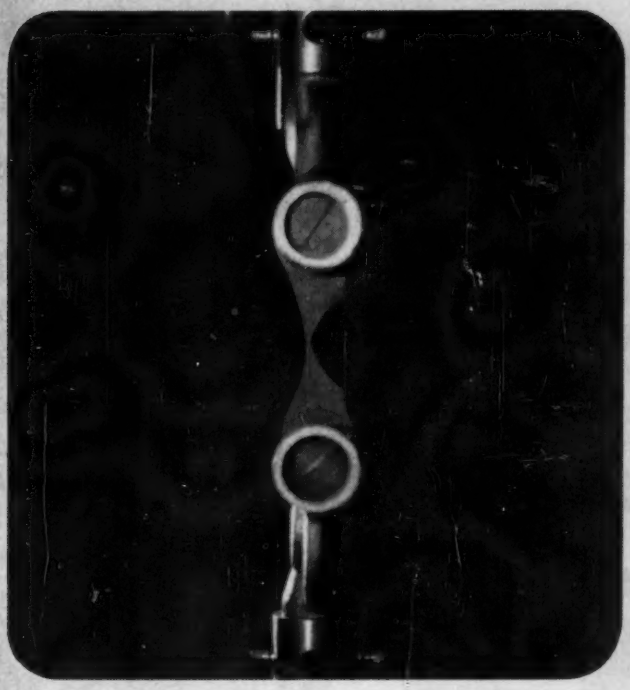


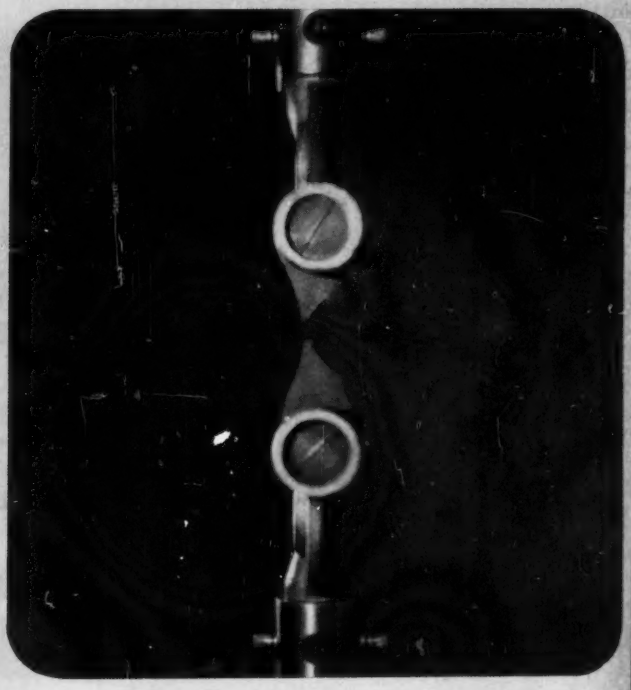


Tearing apart synthetic rubber

Accotex NO-7075 Aprons give you long, trouble-free operation on all types of double-apron frames.

Super-flexible NO-750 Apron insures smooth drafting action and good yarn control on single-apron equipment.





. . . to help Accotex Aprons give

LONG, TROUBLE-FREE SPINNING

Tests like those shown above help Armstrong chemists build even more strength, toughness, and tear-resistance into the Accotex® Aprons you use.

The pictures—taken with a high-speed camera—show a sample of a special synthetic rubber compound being torn apart. The testing device records automatically the force required to stretch the rubber beyond its elastic limit.

This is just one of many research techniques that are used continuously to make sure the Accotex Aprons you buy will meet the exacting demands of today's single- and double-apron high-draft equipment.

Obviously, development tests like these go far beyond conditions that are likely to be encountered on your frames. But this specialized research—matched by the most advanced production facilities—is your assurance that Accotex Aprons will spin top-quality yarn year after year.

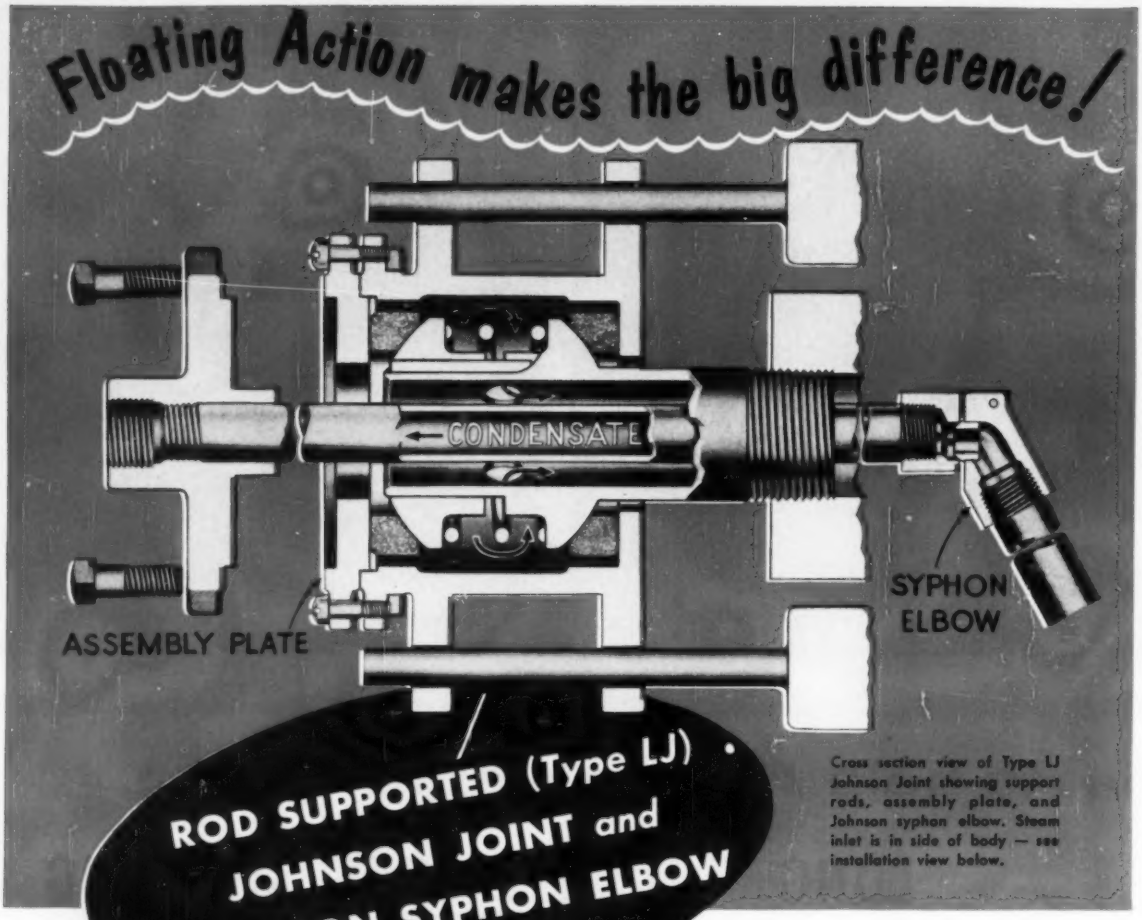
No matter what type of equipment you're using, no matter what kind of fiber or blend you're spinning, there's an Accotex Apron specially engineered for your spinnning needs. If you're not already using these aprons, why not arrange for a test frame next time your Armstrong man calls?

Write today for the booklet, "Armstrong Textile Roll Coverings and Mill Supplies." It gives information on Accotex NO-7075 and NO-750 Aprons and other Armstrong textile supplies. Address Armstrong Cork Company, Industrial Division, 6401 Ivy St., Lancaster, Penna.

Armstrong ACCOTEX APRONS

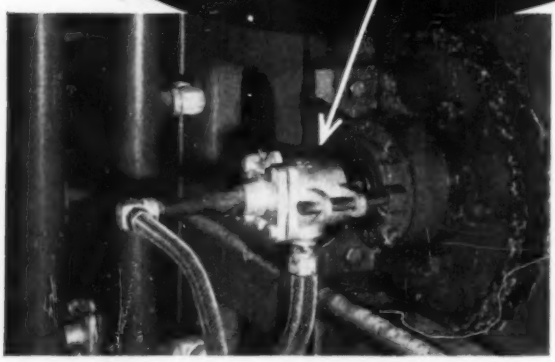
. . . used wherever performance counts

Floating Action makes the big difference!



Cross section view of Type LJ Johnson Joint showing support rods, assembly plate, and Johnson syphon elbow. Steam inlet is in side of body — see installation view below.

ROD SUPPORTED (Type LJ) JOHNSON JOINT and JOHNSON SYPHON ELBOW



Rod-supported Johnson Joint installed in southern mill on 23" diameter x 60" face dry cans operating at 100 yards per minute, 35 lbs. steam pressure.

Write for complete information on Type LJ Joints with Syphon Elbows.

This is the Johnson Joint combination that is proving especially suited for dry cans, print cans and 30" cylinder slashers.

The Type L body has lugs cast on it, so it can be hung on simple supporting rods. All the weight of the housing and pipe connections is thus lifted from the rotating assembly of the joint. These rotating parts "float" freely inside — have only their primary task of maintaining a seal. Longer service life and reduced down-time are direct results.

Perfect team mate is the Johnson Syphon Elbow — successor to the old unwieldy, long radius syphon pipes. It opens to pass through the joint, closes of its own weight to a tight seal when in position. The joint is fitted with a special assembly plate to hold internal parts in position when head is removed to insert or remove the syphon pipe.

Most machinery manufacturers now provide bosses on bearing housings which can be utilized for this type of mounting. So that you can try this combination in your own mill we will gladly supply a couple of units for 90-day test, without any obligation.

Products of The Johnson Corporation

815 Wood St., Three Rivers, Mich.

Rotary Pressure Joints • Compressed Air Separators and Aftercoolers
Direct Operated Solenoid Valves • "Instant" Steam Water Heaters

Need New Pickers?

. . . then think of what you get in

NEW ALDRICH PICKERS!

✓All spur gears are cut instead of having rough cast teeth.

✓Many gears are cut steel where other pickers have rough cast, or malleable iron gears.

✓Ball bearings are used wherever practicable, and in places not used on any other pickers. Oilite bearings are used at most points where ball bearings can not be employed. The extensive use of ball bearings and Oilite bearings eliminates practically all routine lubrication.

✓Self-aligning, permanently lubricated ball bearings are used on screen shafts. They never require attention, and never create the oily chokes occurring with plain oil bearings.

✓Self-aligning Oilite draw roll bearings can be installed in a few minutes, and lubricated every few months.

✓A more sensitive evener, with:

A new weighting method which keeps moving parts under tension and eliminates lost motion

Ball bearing rollers to guide the scale motion in the evener case to keep the scale in perfect alignment and prevent binding against the case

A round sliding stem in an Oilite bushing in the evener case instead of the old rectangular stem without lubrication

An improved evener case, more nearly dust tight than older models

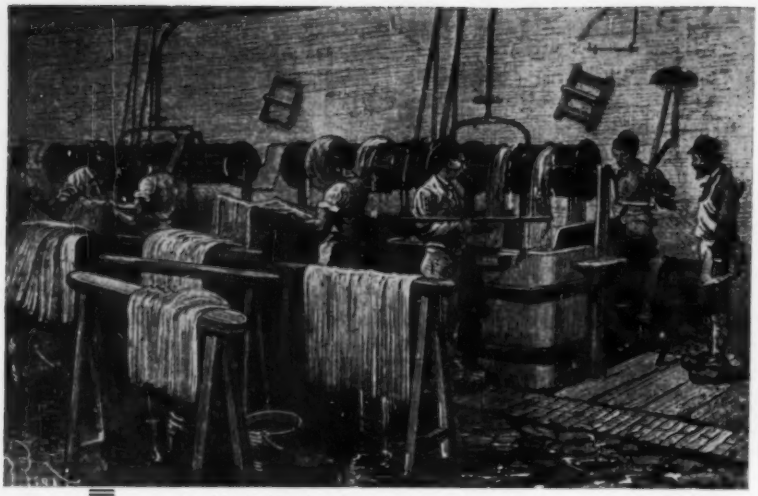
✓A really silent sideshaft drive to the evener. This drive is mounted wholly on ball bearings and provides for any necessary speed changes to take care of different lap weights.

✓The Aldrich Synchronizer, which makes it possible to produce a lap from a lap, instead of merely breaker laps for the cards, as is done on most other single process picking systems.

✓A completely redesigned calender containing so many new features that these will be described in a future advertisement.

Aldrich Machine Works

Greenwood, South Carolina



An Early Dyeing Plant. After a wood engraving circa 1870

"THOSE DAYS ARE GONE FOREVER"

The gentlemen wearing wooden shoes and looking confused in the picture above worked long and hard to achieve uniformity of color . . . they rarely got it. Modern MORTON DYEHOUSE MACHINERY does in minutes what it took days to do in the 19th century, and does it uniformly.

MORTON MACHINE WORKS pioneered in the development of machinery to dye stock and yarn packages in the 300 degree range. The MORTON SYSTEM Equipment allows the processing of all types of packages, beams, and stocks automatically.

MORTON products are designed and built to comply with the requirements of American Society of Mechanical Engineers Code and are authorized to bear the appropriate code symbols.

MORTON

MACHINE WORKS, INC.

COLUMBUS, GEORGIA U.S.A.

Personal NOTES

ABOUT MEN YOU KNOW

Now directing public relations activities for the 26 Abney and Erwin mills in the Carolinas and Mississippi is **Chauncey W. Lever. Richard H. Lewis,** director of Erwin Mills' standards department, has assumed Mr. Lever's previous duties as director of

Mr. Lever

industrial relations for Erwin Mills. * * * Promotions at Renfrew Bleachery division of Abney Mills include: **John I. Smith,** formerly manager and now vice-president; **Creighton D. Griggs,** from superintendent to manager; **Ben N. Anderson** from assistant superintendent to superintendent. **Joseph V. Brice,** formerly with Utica-Mohawk Division of J. P. Stevens & Co., Inc., has been named assistant superintendent. * * * Succeeding **C. P. Dill** who retired as superintendent of Woodruff, S. C., plant of The Abney Mills is **Dacus E. Ross,** formerly assistant superintendent. Mr. Ross has been in the textile field since 1920.

Elected to succeed **H. Wickliffe Rose** of The Linen Thread Co. as president of The American Tariff League was **Karl H. Helfrich** of the Forstmann Woolen Co., Passaic, N. J.

Clarence Hooper of Burlington (N. C.) Industries is now chairman of the Piedmont Section of AATCC, and **Clement O. Stevenson** of Ciba Co. is vice-chairman. * * * At the fall meeting of the Midwest Section, **Arthur I. Hultberg** of Bear Brand Hosiery Co. was reelected chairman, and **Sam M. Littlejohn** of Munsingwear, Inc., was reelected vice-chairman. **Warren B. Broadbent** of Geigy Chemical Corp. was elected secretary.

Ernest Baker is now superintendent of Prudential Fabrics, Lincoln,

(Continued on page 26)

Unirail® Uptwisters in this leading mill were installed as the result of a Leesona Profit Factor Study. Replacing old uptwisters, they are more than living up to expectations. The mill reports an increase of operating effectiveness 10% higher than the increase originally indicated by the Profit Factor Study. Most efficient uptwisters ever built, Unirails produce 2 lb. headless packages . . . cut handling time as much as 30%. Whether your requirements call for uptwisting or other winding or twisting operations, replacement of old equipment with modern Leesona machinery may be what you need for more efficient, more economical production. A Leesona Profit Factor Study will give you the answers to this and other production problems.

Double-profit service you should know about

Here's how expert analysis can help you find your Profit Factor

Right now, many a textile mill is cashing in on its hidden profit potentials — revealed by a Leesona Profit Factor Study.

This is a detailed, *confidential* study of a mill's twisting and winding operations — and related operations — followed by a complete, expert analysis, with recommendations as to just where and how the greatest savings may be made.

Supplementing these Studies, Universal offers the Leesona Pay-As-You-Profit Plans, designed to help mills strengthen their competitive position while safeguarding their capital and borrowing power. These plans provide for either long-term purchase or long-term lease of Leesona twisting and winding machinery.

Together, Leesona Profit Factor Studies and Pay-As-You-Profit Plans comprise the Leesona Double-Profit Service. This folder describes how you may use either feature of the Service to advantage — or how you can profit two ways by combining them. Send for your copy today. This service is available in the U. S. only.

23-5-10

UNIVERSAL WINDING COMPANY

P. O. BOX 1605, PROVIDENCE 1, R. I.

Sales Offices: Boston • Philadelphia • Utica • Charlotte • Atlanta • Los Angeles

Winding and Twisting Machinery for Natural and Synthetic Yarns

First Quality Printing Around the Clock . . .

at Riegel Textile Corporation

"All day, any day, we can get top quality printing results with our two Butterworth Printing Machines," states an official of the Riegel Textile Corporation's Ware Shoals (S. C.) Division.

The heavy cast-iron frames of the Butterworth Printing Machine assure less vibration. Fibre fitting gears give quiet operation. There's long life in the stainless steel color pans . . . easy control through motor-driven oscillating motion for doctor blades . . . and flexibility and variety in the multiple patterns and small figure designs, with up to 14 color shades, which are registered accurately and easily. Nylon-bristled furnisher rolls assure evenness of color, cleanliness and long life.

For true register . . . quick pattern change . . . smooth, uninterrupted production . . . and low maintenance costs, let a Butterworth engineer give you details on Butterworth Printing Machines.

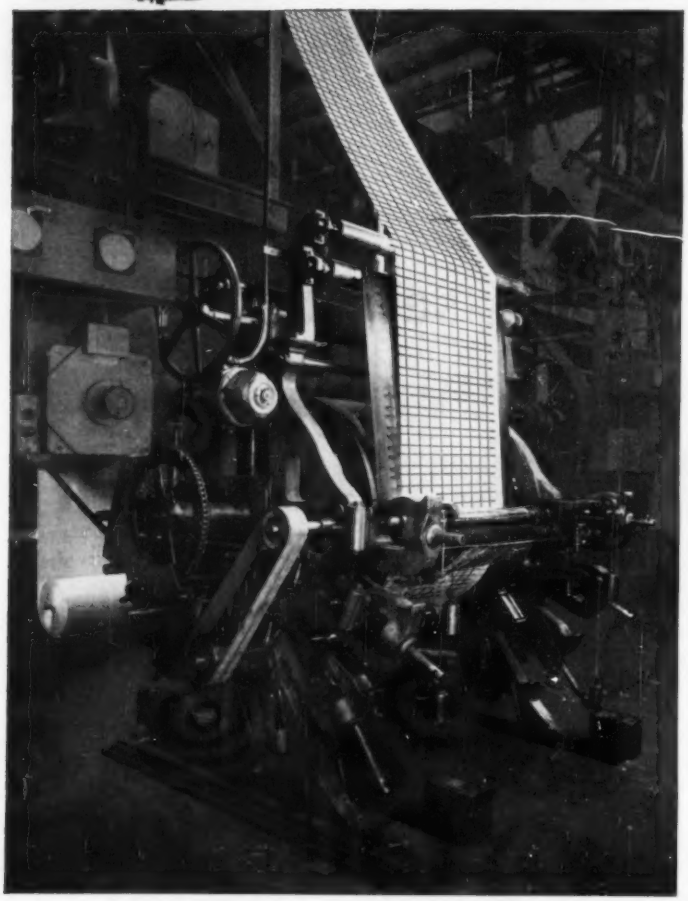
H. W. BUTTERWORTH & SONS COMPANY

Bethayres, Pennsylvania

1211 Johnston Bldg., Charlotte, N. C.
187 Westminster St., Providence, R. I.

Representatives in Principal Cities of the World

Machines for Bleaching, Boiling-Out, Dyeing, Mercerizing, Finishing & Embossing : : Pot Spinning Machines for Synthetic Fibers : : Calender Rolls : : Tenter Chains



One of the two new Butterworth Printing Machines at Riegel Textile Corporation, Ware Shoals Division, Ware Shoals, S. C. Machines are equipped for high speed operation, and print all of the mill's lightweight broadcloth. Material here being printed is a heavy poplin with multiple stripes.

BUTTERWORTH
Serving the Textile Industry Since 1820

produce *Yarns of Distinction*

MORE PROFITABLY
with Whitin Woolen Machinery

WOOL CARDS — 60" — 72" — 84" widths
Felt Cards — 84" — 100" — 110" widths
Automatic Card Feeds
Intermediate Feeds
Single 6 Double Rub Tape Condensers

*** FLEX-SPIN Wool Spinning Frame**
The most advanced wool spinning frame, containing *every* desirable feature.

MODEL E Wool Spinning Frame
The best known and most widely adapted spinning frame in the industry. Made by the originators of wool spinning by the ring method.

*Trade Mark

Whitin machine works

WHITINSVILLE • MASSACHUSETTS

CHARLOTTE, N.C. • ATLANTA, GA.
SPARTANBURG, S. C. • DEXTER, ME.

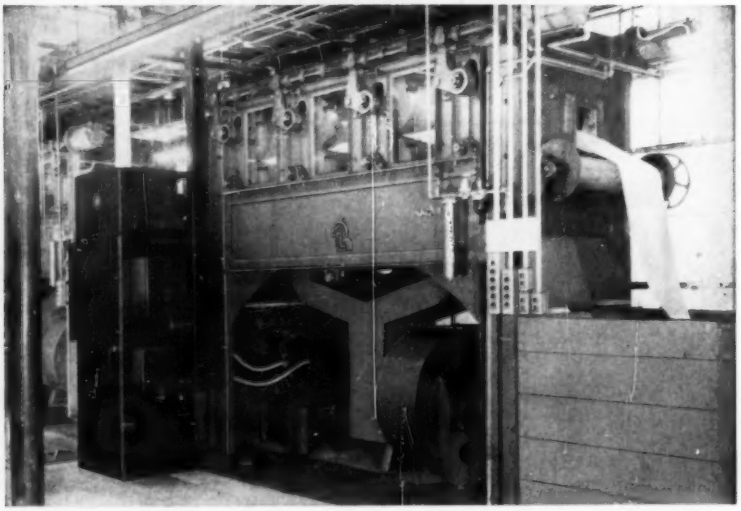
The Fleet Line for Woolens & Worsteds

CONTINUOUS CRUSHER

It's Modern!

It's Economical!!

It's Best!!!



Model CCT-4 (shown here) is dual-unit continuous crusher of 2 units in tandem

CHECK THESE FEATURES

- ✔ 1. Space-Saving, Labor-Saving
- ✔ 2. Accurate Dust Control and Exhaust
- ✔ 3. Crushes Better than Batch Process
- ✔ 4. Easy Operation, Uniform Pressure
- ✔ 5. Removable See-Through Panels
- ✔ 6. Practically No Vibration
- ✔ 7. Coiled Spring Pressure, under Pneumatic Cylinder Control
- ✔ 8. Adjusts for Desired Delivery Speed
- ✔ 9. Synchronizes with Carbonizing Range
- ✔ 10. Consorts with Any Carbonizing Range

NOTE: This completely redesigned and modernized Continuous Crusher makes possible one single continuous operation of acid soaking, drying, baking and crushing. Continuous neutralizing machine is also available to run in tandem with it if desired.

RIGGS AND LOMBARD INC.

FOOT OF SUFFOLK STREET, LOWELL, MASS.

Agents: Paul A. Merriam Company, P. O. Box 86, Providence, R. I., Albert R. Breen, 80 E. Jackson Blvd., Chicago 4, Ill., Larry T. Nelson, 2824 S.W. Montgomery Drive, Portland, Ore., F. W. Warrington Co., 611 Johnston Bldg., Charlotte, N. C., A. Harold Zayotti, Jr., P. O. Box 125, Riverton, N. J., H. E. Mott Co., Limited, Brantford, Ontario, Canada.

Dollars of ***FIRST COST*** *aren't so big...*
if they're the ***LAST COST***

Write for your Copy:
AL STAINLESS STEEL
Report to the
Textile Industry

40 pages of useful information on the applications and advantages of stainless steel in textile plant equipment of all types. Well illustrated—also contains a technical section of data on selection and fabrication, etc.

ADDRESS DEPT. TI-73

First cost isn't everything! What really counts in most cases is not how much a thing costs when new, but how long it lasts; how *little* it actually costs when reckoned in terms of extra years of service.

That is where AL Stainless jumps to the head of the class. Stainless steel is a package of built-in advantages you just can't match anywhere else. No other commercial material is at once as hard, strong and lastingly beautiful — as resistant to heat, wear and corrosion — as easy and inexpensive to clean and maintain.

To top it off, AL Stainless is easy to fabricate, and we produce it in every shape or form a fabricator may require. Check up on its money-making possibilities for *you*, either in your products or your equipment, *and let us help!* ● ***Allegheny Ludlum Steel Corp., Oliver Bldg., Pittsburgh 22, Pa.***

WSD 5483-D

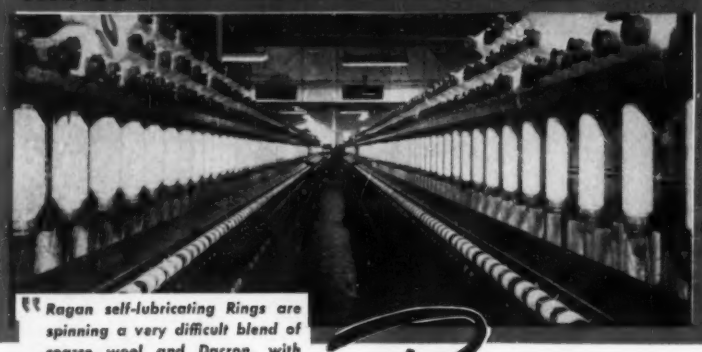
Make it BETTER-and LONGER LASTING-with

AL Stainless Steel

AL ALLEGHENY LUDLUM

Warehouse stocks carried by all Ryerson Steel plants

AFTER 20 MONTHS EXPERIENCE — ONE OF THE SOUTH'S MOST MODERN MILLS SAYS:



"Ragan self-lubricating Rings are spinning a very difficult blend of coarse wool and Dacron, with infrequent oiling, smooth running, exceptional traveler life, freedom from fly loading. No ring holder, oil reservoir and ring one piece."

Ragan

SELF-LUBRICATING

Rings

OIL ONLY ONCE IN 24 HOURS

The filter pads at ports feed oil from the deep reservoir, but there are no wicks to carbonize. These rings just won't run dry!

NO MONDAY

CAKED-ON

FLY TROUBLES

Note how these rings can be set above ring-rail, so no fly can collect. Quick clean-up and fewer ends-down. Ragan design means balanced traveler wear. Ragan super smooth finish, special heat-treating, plus unfailing lubrication make them outwear machined rings, though costing no more and running at higher speeds.

You get smoother yarns when you spin worsted, synthetics and mixtures; twist cottons, on Ragan self lubricating Rings. Now available 2¾ x 7/16 and 2¼ x 7/16. Travelers designed for these rings are immediately available from four leading makers.

RAGAN RING COMPANY

The only manufacturer of Textile Rings in the South

901 S. Main Street, East Point, Georgia

REPRESENTATIVES: John Foard, P. O. Box 574, Newton, N. C. • H. B. "Booch" Askew, P. O. Box 424, Griffin, Ga. • L. O. Talley, P. O. Box 1169, Mexia, Texas • William S. Johnstone, P. O. Box 3213, Station A, Greenville, S. C. • William R. Fox, P. O. Box 380, Providence, R. I.

Personal NOTES ABOUT MEN YOU KNOW

(Continued from page 20)

Maine. He was formerly with the Puritan Mills, Plymouth, Mass.

Marion Beacham, who for several years was general manager of Deering, Milliken & Co.'s woolen mills, has now joined Amerotron Corp., where he is division manager of the Barnwell, S. C., and Tifton, Ga., plants.

William M. Grosvenor, Jr., who had been associated with Sidney Blumenthal & Co. Inc. since 1937, resigned from the position of vice-president in charge of research and fabric development on Nov. 15. * * * **Allan E. Shore,** vice-president in charge of automotive fabrics, resigned on the same date, and **John P. McGivney** became acting manager of that division to replace him. Promoted to assistant manager was **Jerome A. Ciaccia.**

Fight Polio Epidemics!

Join the

MARCH OF DIMES

January 3 to 31

Ernest C. Cross, who has been a member of the board and assistant vice-president of Borden Mills at Kingsport, Tenn., for the past five years, was recently elected vice-president. **Joseph G. Lillis** is now assistant vice-president.

Raymond Kassar, formerly manager of the Industrial and Diversified Fabrics Division of Burlington Mills, is now manager of Burlington Narrow Fabrics, with headquarters at 26 West 40th St., New York. He is succeeded in his previous position by **Charles M. Travis.** * * * **Thomas S. Tolar** and **W. C. Harris** have been named executive vice-presidents and members of the board of directors of Pacific Mills, a member organization of Burlington Industries. Mr. Tolar is in charge of woolen, worsted, and rayon operations, and Mr. Harris is in charge of cotton operations.

Succeeding **Karl Bishopric** of Spray (N.C.) Cotton Mills as president of the Carded Yarn Association, Inc., is **J. G. H. Morris** of Adelaide Mills in Anniston, Ala. Other officers elected

(Continued on page 34)

SI

Here we present SI CO (our chemist) as seen by:

CHEMICAL MAGIC
As seen by: THE GENERAL PUBLIC
As seen by: THE CUSTOMER
GENUINE IVORY
As seen by: THE SALES DEPARTMENT
As seen by: HIMSELF
As seen by: HIS ASSISTANT
As seen by: THE ACCOUNTING DEPT.

It all depends on your point of view. But no matter how you look at it, SEYCO products and SEYCO service will help you get the best piece of goods and the best running mill you've ever had. Why not write us about your problems today?

Warp Sizing: *Softeners, Binders, Penetrants, Ty-In Penetrants, Shuttle Dressing, Waxes.*

Wet Processing Chemicals and Auxiliaries: *Dye Assistants, Penetrants, Rewetting Agents, Sanforized Fabric Oils, Detergents, Scouring Agents, Softeners.*

Niagara Twist-Setter: *Yarn Conditioning Penetrants.*

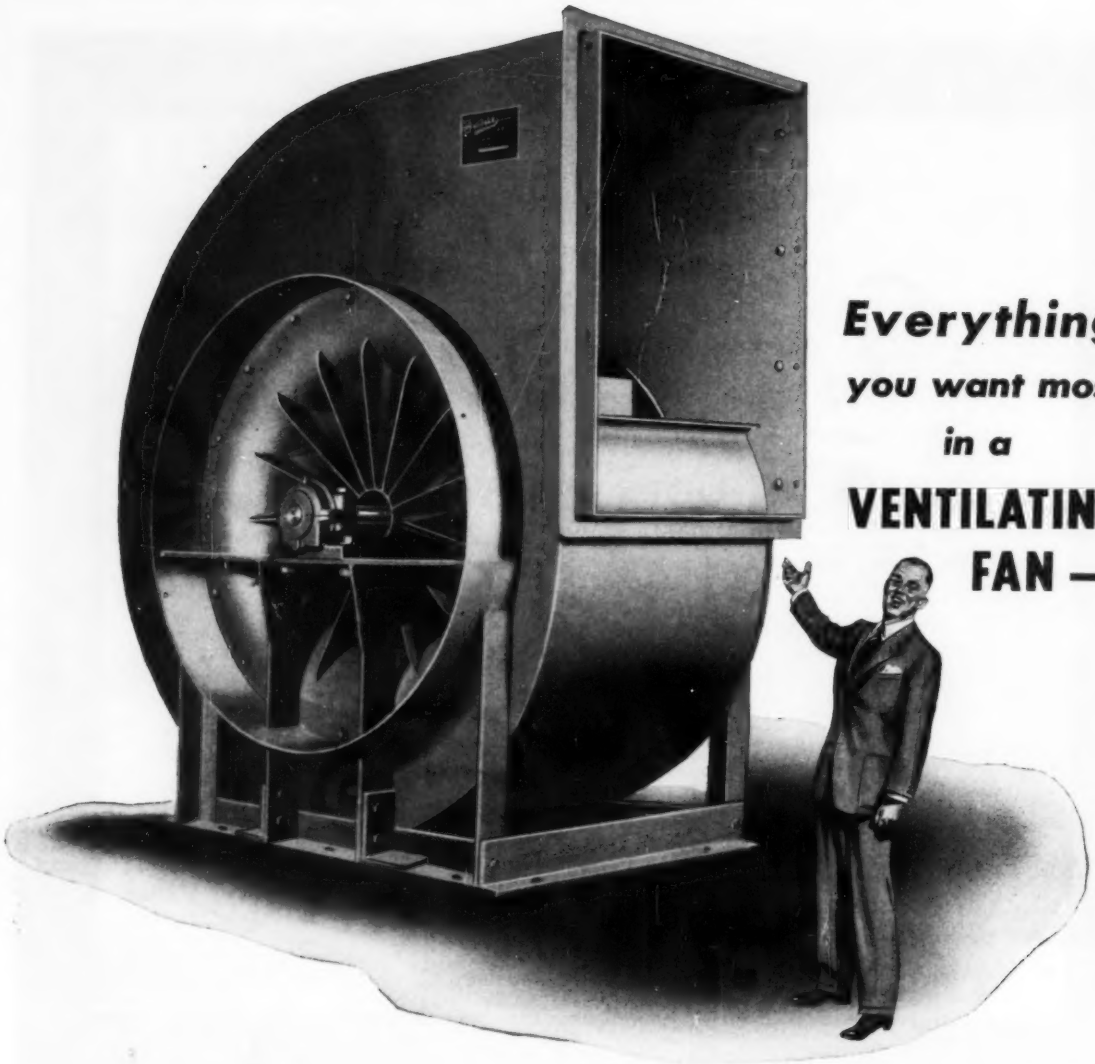
Seyco Warp Lubricator.

Headquarters for textile chemicals

SEYDEL-WOOLLEY & CO.

748 RICE STREET, ATLANTA, GEORGIA

SEYCO



Everything you want most in a VENTILATING FAN —

"BUFFALO" HIGH EFFICIENCY

This Type BL Limit-Load fan is the most efficient and stable performer in our 78 years of building fine fans. Its double backward curved blades, its free-flow bell-shaped inlet and properly shaped housing scroll give you the most efficient air delivery — for your ventilation system or for supplying air in air conditioning systems.

"BUFFALO" INBUILT LONG LIFE

Every part of a BL Fan — shaft, bearings, rotor, housing — is designed and built for *permanency.* Accessibility of all parts plus the non-overloading feature, mean low costs through the years.

"BUFFALO" LOW NOISE LEVEL

The same features that make BL Fans efficient, also make them quiet. Air passes through with minimum turbulence, and the precision balanced medium speed rotor means further noise reduction.

"BUFFALO" "Q" FACTOR* GIVES SATISFACTION

*The "Q" Factor — the built-in Quality that assures trouble-free satisfaction and long life — is your assurance of a best buy in all "Buffalo" products.

WRITE FOR BULLETIN F-101

"Buffalo"

BUFFALO FORGE COMPANY

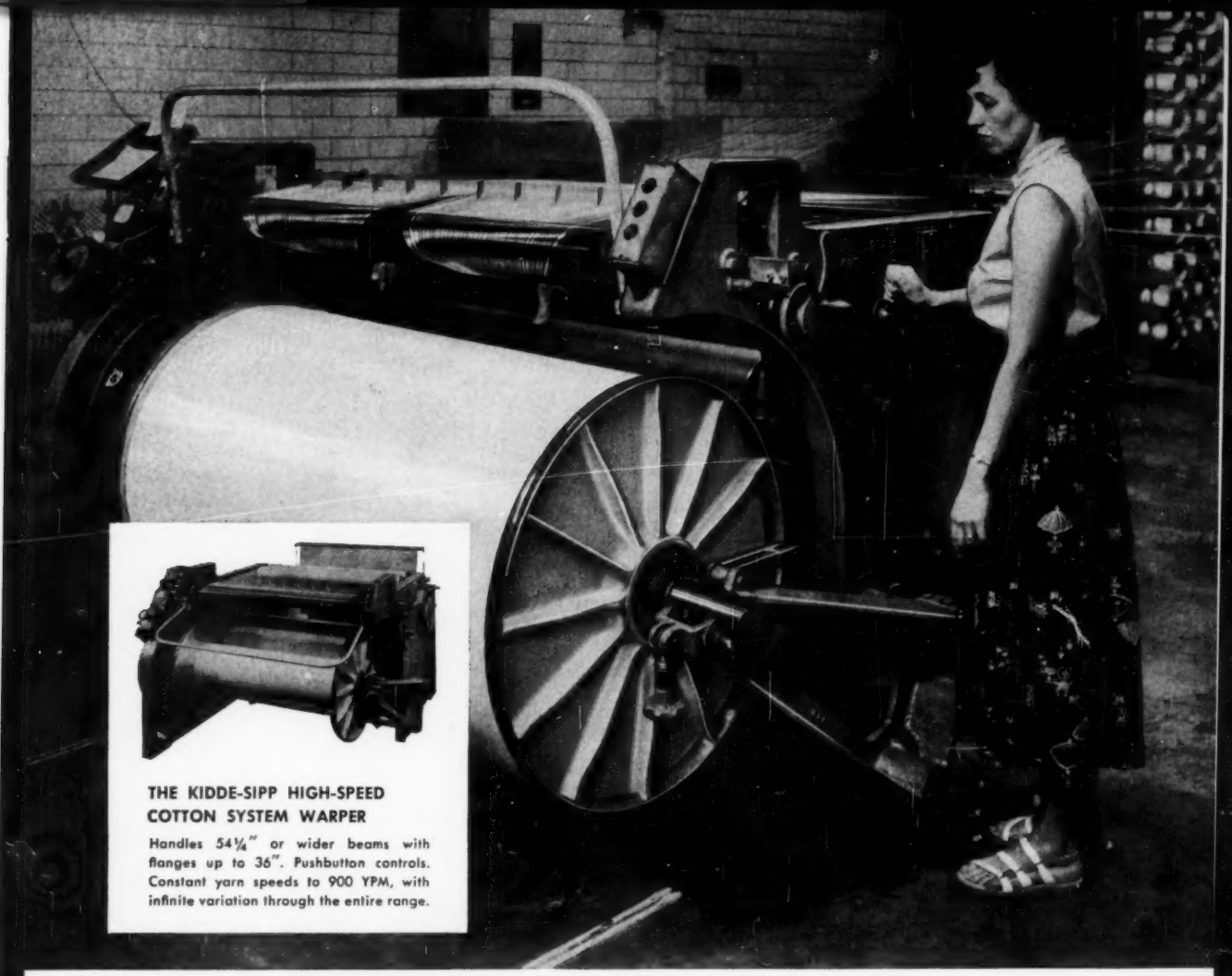
175 Mortimer St. Buffalo, New York

PUBLISHERS OF "FAN ENGINEERING" HANDBOOK

Canadian Blower & Forge Co., Ltd., Kitchener, Ont.

Sales Representatives in all Principal Cities

VENTILATING AIR CLEANING AIR TEMPERING INDUCED DRAFT EXHAUSTING FORCED DRAFT COOLING HEATING PRESSURE BLOWING



THE KIDDE-SIPP HIGH-SPEED COTTON SYSTEM WARPER

Handles 54¼" or wider beams with flanges up to 36". Pushbutton controls. Constant yarn speeds to 900 YPM, with infinite variation through the entire range.

No Powerful Katrina . . . but she doffs beams without help

No brawn is needed to doff the heaviest beam from a KIDDE-Sipp Warper. The operator pushes a lever and an hydraulic system takes over. It gently swings the 2000-pound beam down and out of the warper, leaving it ready to be picked up and taken to your slashers.

Besides easy doffing the KIDDE-Sipp Warper is also well known for the high quality beams it makes. Its dynamically-balanced presser roll is loaded at each end to provide even pressure without bouncing. Beams are smooth . . . free from ridges and flats. Powerful brakes stop the beam within one revolution and automatically adjust themselves to compensate for the increased load as the yarn builds up. The brakes on the beam, the presser roll and the measuring roll are synchronized to prevent yarn scuffing.

The beam is directly driven from the motor by V-belts. Constant yarn speed is maintained by the D.C. drive. Because there are neither counter shafts nor chains and sprockets in the drive . . . smooth and trouble-free operation is insured.

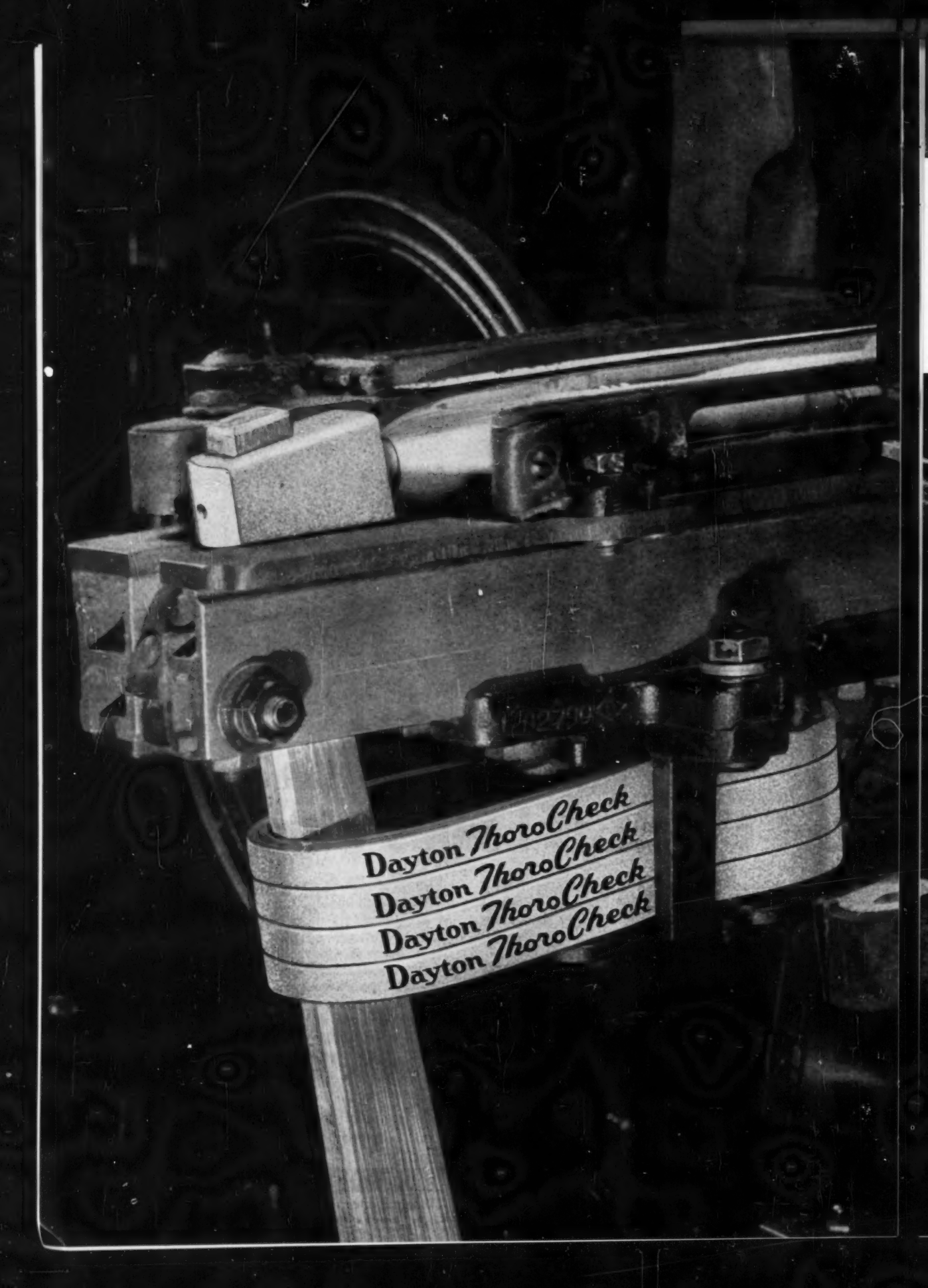
So, if you haven't yet investigated these high-speed warpers, write today to:

TRICOT AND RASCHEL MACHINES • TRICOT WARPERS • HORIZONTAL WARPERS
BEAMERS • CREELS • SLASHERS • WINDER-REDRAWS • TENSOMETERS

Kidde MANUFACTURING CO., INC. — 42 FARRAND STREET — BLOOMFIELD, NEW JERSEY

SOUTHERN OFFICE — 267 W. MAIN ST., GASTONIA, N. C.

The word KIDDE is the trademark of Walter Kidde & Company, Inc., and its affiliated companies.


Dayton ThoroCheck
Dayton ThoroCheck
Dayton ThoroCheck
Dayton ThoroCheck

Improve your Picker Control and save 25 to 50 percent

In Picker and Check Strap Costs!

One mill saved 50% on picker replacement by installing Dayton Thorobred Loop Pickers. It's easy to see why, too. Daytons, molded in one piece, won't break when driven onto the stick.

Dayton Loop Pickers cushion millions of shuttle contacts without strain. And contact is perfect every time because of the slightly tilted, flared-bottom picker stick hole that insures easy, accurate seating and exact fit. Smooth sides and round corners practically eliminate jerked in fillings, save time and money – increase production.

Other mills report 25 to 50% savings in check strap costs with Dayton ThoroCheck Endless Check Straps.

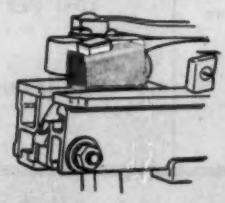
Typical proof: One mill ran Daytons on X-2 looms 24 hours a day, 5 days a week. After 2400 hours, no wear was apparent, no adjustment needed. Other check straps lasted half as long.

Revolutionary in design and construction, Dayton ThoroCheck straps eliminate drag over stick, give safe, graduated braking in both directions. Temperature or humidity never affect them, so you're assured fast, Monday starts.

Try Dayton Thorobred Loop Pickers and Dayton ThoroCheck Endless Check Straps on your looms for perfect control, sizeable savings. Your Dayton Representative will arrange a test or write *Dayton Rubber Co., Textile Div., 401 S. Carolina National Bank Bldg., Greenville, S. C.*

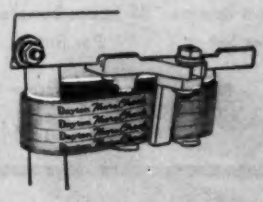
© D.R. 1956

Dayton Thorobred Loop Picker



New Design! Narrow back eliminates wear on lay end strap.

Dayton ThoroCheck Check Straps



Extra economy! Can be replaced singly or in sets.

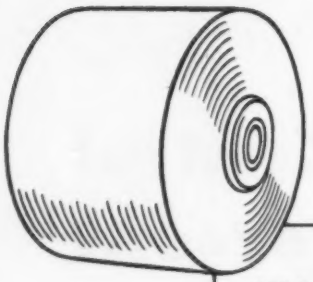
Dayton Rubber

51 YEARS OF PROGRESS

Dayco and Dayton Thorobred Textile Products for better Spinning and Weaving.

LARGE PACKAGES HAVE ADVANTAGES

in the steps which FOLLOW THE SPINNING

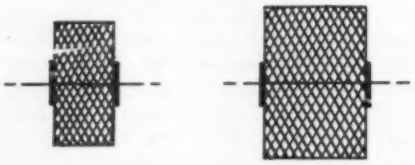


SPINNING

12" Bobbin — 3" Ring — 12 oz. Bobbin
= 1.33 Bob/lb. — 15,000 Yds.
9" Bobbin — 2" Ring — 3.85 oz. Bobbin
= 4.16 Bob/lb. — 5,000 Yds.

3 TIMES As Much Yardage On Bobbin

SPOOLING

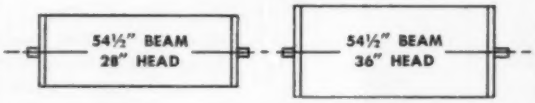


TYPE "C" CHEESE	TYPE "D" CHEESE
2.38 LBS.	6.00 LBS.
48,000 YDS.	120,000 YDS.

2.5 TIMES

AS MUCH YARDAGE PER CHEESE

WARPING



28" BEAM	36" BEAM	40" BEAM
530 LBS.	875 LBS.	1,050 LBS.
24,000 YDS.	40,000 YDS.	40,000 YDS.
445 ENDS	441 ENDS	529 ENDS
BEAMS PER CHEESE	BEAMS PER CHEESE	BEAMS PER CHEESE
TYPE "C"-2 TYPE "D"-5	TYPE "C"-1 TYPE "D"-3	TYPE "C"-1 TYPE "D"-3

SLASHING

Assuming 1,200 yds. per Loom Beam

28" BEAM	36" BEAM	40" BEAM
20 Loom Beams Per Set	33 Loom Beams Per Set	39 Loom Beams Per Set
Average Slasher Creelings per 120-hr. Week		
5.68	3.67	3.16

TWISTING

2.38 LB. CHEESE	6.00 LB. CHEESE
48,000 YDS. PER CHEESE	120,000 YDS. PER CHEESE

2.5 TIMES

AS MANY BOBBINS CAN BE TWISTED PER CREELING

Note: 24s Yarn Assumed in All Comparisons

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • WARP DRAWING MACHINES

BARBER-COLMAN COMPANY

ROCKFORD • ILLINOIS • U. S. A.

FRAMINGHAM, MASS., U. S. A. — GREENVILLE, S. C., U.S.A. — MANCHESTER, ENGLAND — MUNICH, GERMANY

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Batliboi & Company Forbes Street, Fort Bombay, India	J. Rabasa Isabel la Catolica 45-913 Apartado 7348 Mexico D.F., Mexico	Quimamil S.A. Anilinas e Representacoes Rua Glicerio 537/547 Caixa 5658 e 3431 Sao Paulo, Brazil	Do-Yei Shoji Kabushiki Kaisha No. 7 Awajimchi 1-Chome Higashi-ku Osaka, Japan	Associated Agencies (M'cr.) Ltd. Piccadilly House 11 Piccadilly Manchester 1, England	Associated Agencies (M'cr.) Ltd. 27 Kothari Building Napier Road Karachi 2, Pakistan

Sharp or dull shades . . .

NATIONAL CARBANTHRENE® BLACK BROWN VA PASTE

Here's a versatile National anthraquinone vat that is particularly useful for shading subdued deep tones and as a shading color or major component in deep browns.

In heavy shades on cotton or viscose, National Carbanthrene Black Brown VA Paste has maximum (8) light fastness (In medium shades, it rates excellent; in light shades, very good!). In addition to excellent wash fastness this National Dye rates well up the scale in a long list of tests as shown in our Bulletin #429. Recommended also for materials that are to be resin finished for crease resistance.

Get in touch with our nearest office for shade card, working sample, price and delivery on this useful dye.

NATIONAL®

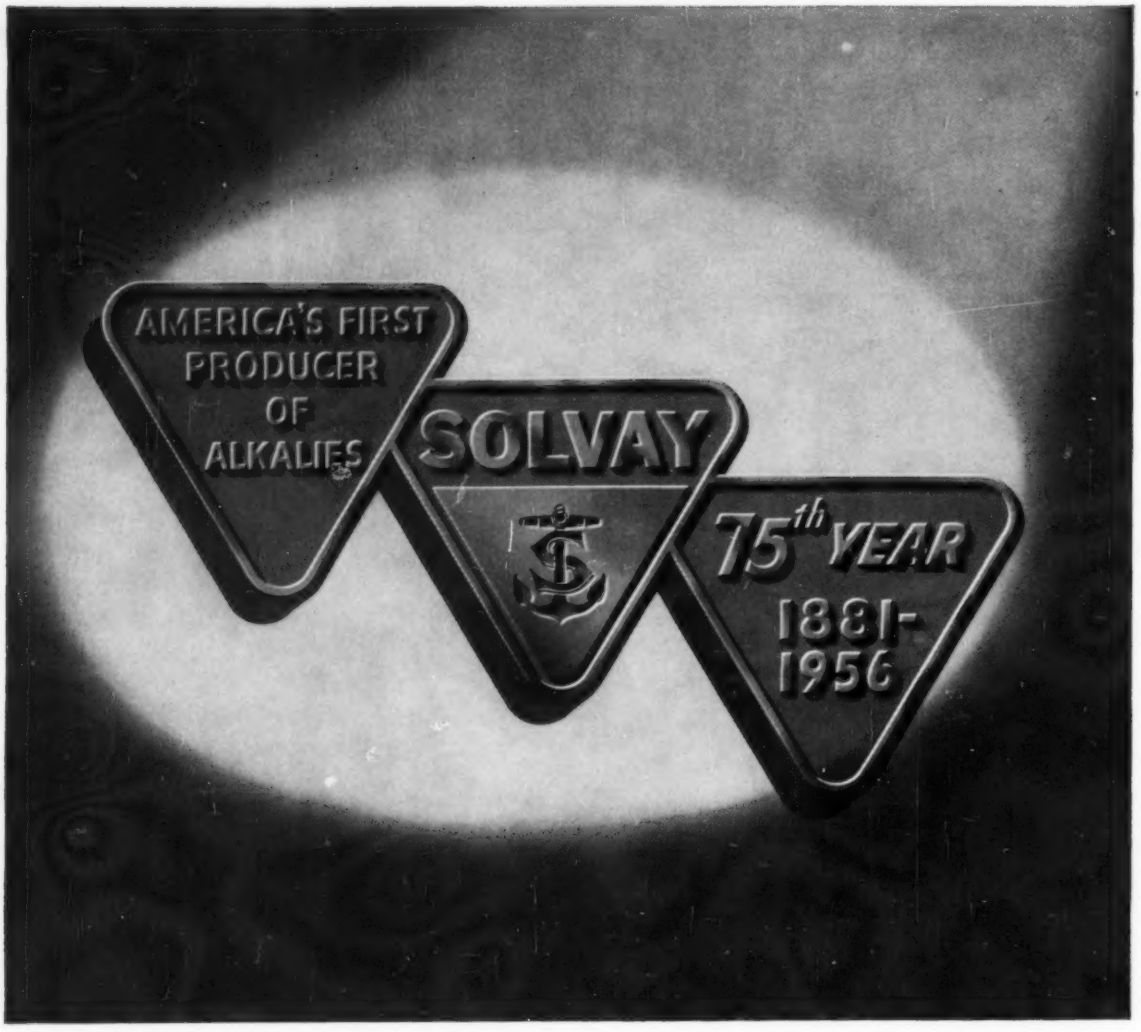
vat dyes

LIGHT FAST... WASH FAST... FOR THE-LIFE-OF-THE-FABRIC

Allied Chemical

NATIONAL ANILINE DIVISION ALLIED CHEMICAL & DYE CORPORATION

40 Rector St. New York 6, N. Y. • Boston Providence Philadelphia Chicago San Francisco Portland, Ore. Greensboro Charlotte Richmond Atlanta Los Angeles Columbus, Ga. New Orleans Chattanooga Toronto



SOLVAY'S 75th YEAR

As America's pioneer producer of alkalies, we are proud of the contributions Solvay has made to the dynamic growth of American Industry during the past 75 years.

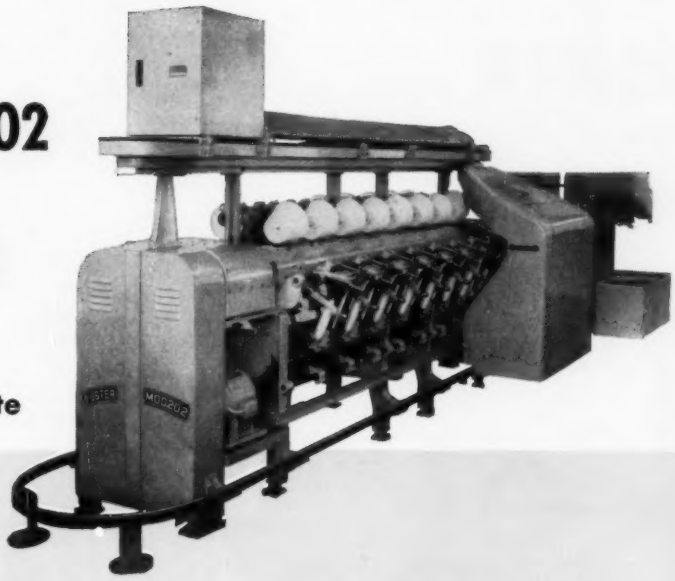
It is natural to look at our 75th year as a mark of achievement.

Be assured that in the years of industrial development ahead Solvay products and service will continue to set the pace of leadership.

SOLVAY PROCESS DIVISION • ALLIED CHEMICAL & DYE CORPORATION • 61 BROADWAY, NEW YORK 6, N.Y.

FOSTER MODEL 202
Automatic
CONE WINDER

Operator Can Handle
Up to 22 Bobbins per Minute



Operator drops full bobbin in chute.

Operator catches loose end in clip.

This means that with this machine you can produce 100% to 300% more poundage than with the most efficient non-automatic winder, the degree of increase depending on the type and count of yarn.

And you end up with cones that are suitable for knitting — identical in this respect with the well known Foster Model 102 cone. No other automatic cone winder can produce cones of such quality.

The illustrations herewith show how work for the operator is tremendously reduced. Her only duties, other than those shown here, are to don and doff cones and thread up new ones.

This is only part of the story. Get ALL the facts. Send for Bulletin A-100.

FOSTER MACHINE COMPANY

A Winder for Every Textile Purpose

Westfield, Massachusetts, U.S.A.

Southern Office — Johnston Bldg., Charlotte, N. C. • Canadian Representative — Ross Whitehead & Company, Limited, 1475 Mountain St., Montreal, Que. and 35-37 King St. W., Toronto, Ont. European Representative — Muschamp Textile Machinery, Limited, Keb Lane, Bardsley, Oldham, England.

FISHER COMBINATION CHEESE STORAGE AND CREELING TRUCK

Designed for the Development and Research Engineer of Russell Mfg. Co., Alexander City, Ala., this is another Fisher *functional* truck—made to do a specific textile job better.

ABOVE: Loading cheese units from type D automatic spooler storage racks to Fisher floating-bottom truck.

RIGHT: Girl stands on platform and loads creels swiftly and easily — each cheese is ready at hand level when needed.

LEFT: Russell's Plant Supt. demonstrates the raised cloth-holding arm, for use when long storage demands a cloth cover to protect cheese from lint, dust, and other foreign matter.

Contact our nearest representative, or write the Company, for information about this and other Fisher functional textile trucks.

Representatives: **Carolina Supply Co., 35 W. Court St., Greenville, S. C.**
Textile Specialty Co., Box 1297, Greensboro, N. C.
J. W. Davis, 122 Dillingham St., Columbus, Ga.
Thos. A. Davis, 412 Swift Bldg., Columbus, Ga.

FISHER MANUFACTURING CO.
MATERIALS HANDLING EQUIPMENT TEXTILE
BOX 244 -- HARTWELL, GEORGIA

Personal NOTES ABOUT MEN YOU KNOW

(Continued from page 26)

at the annual meeting of the association in November are: **M. Y. Cooper** of Harriet & Henderson (N.C.) Mills, first vice-president; and **J. A. Conner** of Hyde Park Mills, Inc., at Covington, Tenn., second vice-president. Re-elected executive vice-president and treasurer was **E. O. Fitzsimmons.**

William McDaniels has been named production manager of The William Carter Co. to fill the vacancy created by the retirement of **Paul H.**

Mr. McDaniels **Mr. Franz**

Franz, who had been with the company 48 years. Assistants to Mr. McDaniels are **William Ross,** in charge of operations, and **Walter D. Leach,** who is in charge of planning.

In addition to the reelection of **A. G. Heinsohn, Jr.,** as president and chairman of the board of Cherokee Textile Mills in Sevierville, Tenn., new officers elected are **Charles H. Reynolds,** vice-president; and **James M. Sherer,** treasurer. Mr. Reynolds and Mr. Sherer are both officers of Spindale (N.C.) Mills.

William W. Couch resigned his position as executive vice-president and director of the Durham (N. C.) Hosiery Mills to become vice-president and director of sales for Morganton (N. C.) Full Fashioned Hosiery Co. and Drexel (N. C.) Knitting Mills Co., effective Jan. 1.

John E. Clark, secretary of The Duplan Corp., has been elected to the additional position of treasurer to replace **Walter Neal** who resigned after 24 years. * * * **William A. Wood, Jr.,** 3801 Madison Ave., Greensboro, N. C., has been promoted from southern sales manager for throwing sales to sales manager of all the firm's throwing sales.

Recently elected president of the Durene Association of America was

Soromine AT

This new white amphoteric softener is ideal for treating dyed, printed or white bleached textiles... whether manufactured from animal, cellulosic or synthetic fibers. Besides imparting a full, smooth hand with good body, it reduces static electricity and gives excellent lubricity to yarns.

Being an ampholyte, SOROMINE®AT can function either as a cationic softener in acid liquors, or as a non-ionic and/or anionic softener in neutral and alkaline liquors. Application on yarns and piece goods is simple, since its exhaust can be controlled by pH adjustment.

It can be applied on quetch or pad, in pressure machines, jigs or overhead reel machines. It is compatible with the usual finishing ingredients — such as urea formaldehyde and melamine resins, starches, sulfonated oils, dextrin, etc. Other advantages of SOROMINE AT are its resistance to yellowing and discoloration, and lack of effect on light fastness of dyed fibers.

Our application engineers will be glad to help you incorporate SOROMINE AT softening into your finishing process. Write today for booklet with complete information.

From Research to Reality

ANTARA gaf

ANTARA® CHEMICALS

A SALES DIVISION OF GENERAL ANILINE & FILM CORPORATION

435 HUDSON STREET • NEW YORK 14, NEW YORK

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THE "NATURAL" BRUSH FOR SYNTHETICS

SHEAR RAISING

When the synthetics industry blossomed forth some 25 years ago, M. W. Jenkins' Sons brought their considerable experience to the industry. Having designed brushes for textiles since 1877 and keeping abreast of technological advances, M. W. Jenkins' Sons then and since developed a series of brushes specifically designed to meet the new and challenging problems presented.

As with all its products, whether for the textile or other industries, Jenkins' METLKOR brushes for synthetics are the best available. They will not sag, split, crack or get out of alignment, are uniformly tufted, filled, trimmed and spaced to give uniform performance. Set in flat wire, they are wound about a permanent metal core which can be rebristled with the same or any other desired bristle.

For any problem requiring brushes, M. W. Jenkins' Sons is prepared to supply a standard or special brush to meet your need.

FURNISHER

PRINTING BLANKET WASHER

PRINTING BLANKET DRIER

OTHER METLKOR BRUSHES FOR SYNTHETICS:

BRUSHING MACHINE CARDING
BRUSHING PRIOR TO PRINTING

M. W. JENKINS' SONS, INC.

Three-Quarters' Century of Pioneering Brushes for Industry

Cedar Grove, Essex County, New Jersey

Personal NOTES ABOUT MEN YOU KNOW

Arthur K. Johnson, vice-president of Dixie Mercerizing Co., Chattanooga, Tenn. Reelected officers include: **Donald Jonas,** vice-president; **Joseph P. Holt,** treasurer; and **A. C. Layton Newsome,** executive secretary.

Walter Danhoff, for the past four years superintendent of Caledonia Mills in Lumberton, N. C., has assumed the duties of night superintendent of Fieldcrest Mills, Inc.'s towel mill in Fieldale, Va. * * * **J. P. Foster,** who has been with Fieldcrest since 1947, has been promoted from assistant to the superintendent to assistant superintendent of the blanket mill at Spray, N. C.

Henry Gerrits, formerly resident manager of the Norwich (Conn.) Mills of American Woolen Co., is now superintendent of Glen Woolen Mills.

Polio isn't licked yet!

Join the MARCH OF DIMES

January 3 to 31

Chairman of the newly formed South Carolina Ports Authority Council is **William H. Grier,** executive vice-president and general manager of Rock Hill (S. C.) Printing & Finishing Co.

J. Elmer Hahn, president of Lebanon (Tenn.) Woolen Mills, has been elected a director of the National Association of Wool Manufacturers, representing the blanket producers group. He fills the vacancy created by the resignation of **Grenville R. Holden** of F. C. Huyck & Sons, Inc.

Gordon L. Synan, who has been with Hampton Looms of Virginia, Inc., Bedford, Va., since 1930, has been elevated to the presidency to succeed the late **Robert C. Atherholt.** New vice-presidents named by the directors are **Benjamin Press** and **Herbert K. Webb.**

William F. Jackson, who for the past several months has been superintendent of Greenville (R. I.) Finishing Co., is now with Dolgeville (Mass.) Finishing Co., in an executive capacity. Before coming to Greenville, Mr. Jackson was manager of

(Continued on page 42)

Stehedco GYROTEX*

Textile Bobbins

THE QUALITY IS BUILT RIGHT IN

- HAS THE SMOOTH BALANCE OF A GYROSCOPE
- PERFECT CONCENTRICITY WITH THE SPINDLE
- HAS THE GREATEST STRENGTH EVER OFFERED
- MADE OF HIGHEST QUALITY MATERIALS AVAILABLE
- LONGEST PERFORMANCE WITH SUPERIOR SERVICE

GYROTEX* MEANS THE VERY BEST BOBBIN THAT IS ENGINEERED BY TEXTILE SKILL FOR EXACTING TEXTILE NEEDS

ALL METAL STRUCTURAL CORE
FINEST BUSHINGS FOR SPINDLE CARE
TOUGH HEADS AND BARREL
PRECISION DIMENSIONS WITH UNIFORMITY
FINISH THAT QUALITY YARNS DESERVE

RIGID CONSTRUCTION PREVENTS TRAPPING
ENGINEERED FOR STEAMING
ALL TYPES AND SIZES AVAILABLE
TWISTERS, WINDER-SPINNERS, PIRNS
FOR STRAIGHT AND TAPERED SPINDLES

***GYROTEX NAME AND CONSTRUCTION PATENTED**

YOU SAVE WHEN YOU BUY STEHEDCO QUALITY

STEEL HEDDLE MFG. CO.

2100 WEST ALLEGHENY AVENUE **PHILADELPHIA 32, PENNSYLVANIA**

1-5-1

Combination Yarns

Strong • Pliable • Easy-to-Work

Any combination of these metallic, synthetic and natural yarns

Branson Combined Metallic Yarns

Non-tarnishing, highly color-fast and heat resistant metallic yarn combined with natural fibers or synthetic yarns. Wide range of metallic colors and widths.

Branson Combined Synthetic and Natural Yarns

Synthetic yarns such as Dacron, Nylon, Acetates, Acrylics and other man-made fibers combined with natural yarns.

Branson Elastic Yarns

Highest quality elastic yarns for hosiery, weaving and other trades for the past 18 years.

Made to your order

by Branson

Branson Combined Yarns are custom-made to your specifications. These strong, pliable, easy-to-work yarns are expertly manufactured by highly skilled technicians of many years experience and are guaranteed to run smoothly on your machines.

Tell us your requirements... let us work out the details with you.

Branson Company

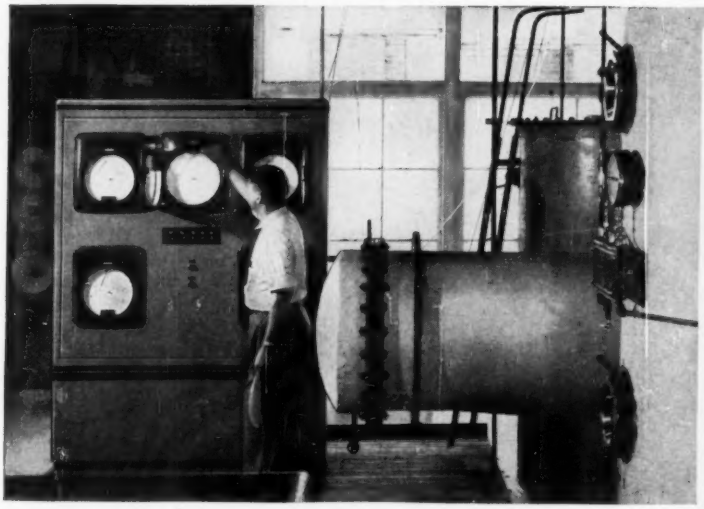
1808 Liberty Life Bldg. • Charlotte, N.C.

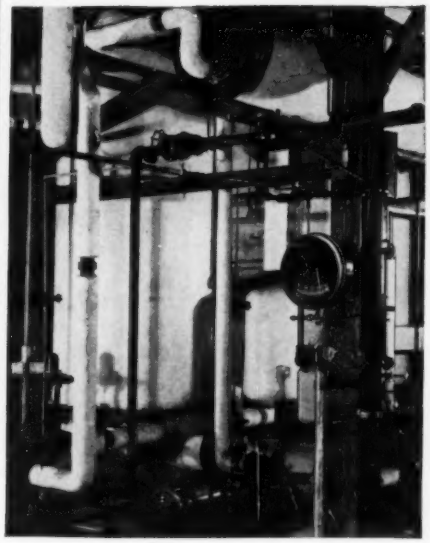
Plant: Monroe, N. C.

CHICAGO
Napier & Harshman
3555 Peterson Ave.

NEW YORK
Robert Napier
51 E. 42nd St.

Get Real Caustic Economy with AUTOMATIC EVAPORATOR CONTROL





Installation at one of American Thread Company's plants, designed for Zaremba Evaporators. Careful estimates indicate that this Foxboro Cabinet Control system will pay for itself in less than a year through new, overall economies.

A New Opportunity to Modernize Another Important Textile Process

By adapting the basic principles of successful evaporator control to textile processing, a far more efficient means of reclaiming caustic is made available. Through accurate, coordinated control of variables, this latest Foxboro development improves caustic reclamation three ways . . . it increases evaporator capacity and saves caustic, thus cutting costs; it helps to reduce stream pollution, and it eliminates routine checking, manual controlling and record writing.

Textile Machinery and Mill men worked closely with Foxboro engineers in developing this important new automatic control system. Such cooperation frequently leads to important processing advances and this is no exception. For complete information on the new automatic evaporator control, contact your nearby Foxboro Field Engineer or write, **The Foxboro Company, 4812 Neponset Ave., Foxboro, Massachusetts, U. S. A.**

5 OUTSTANDING FUNCTIONS

1. *controls caustic concentration automatically by electronic comparison of solution's boiling point to boiling point of water at the same pressure . . . a unique method on Foxboro systems, known as "boiling point rise" control—*

2. *accurately measures steam flow and weak liquor flow to indicate efficiency of evaporators for better maintenance—*

3. *controls liquid level of make-up caustic tanks—*

4. *measures the percent of caustic in steam condensate and condenser hot water leaving evaporator . . . and—*

5. *automatically diverts these to sewer if caustic content rises above safe limits.*

FOXBORO
Reg. U. S. Pat. Off.

Process-Improving Controls FOR THE TEXTILE INDUSTRY

Yes, we said "Fine Counts"

Interoffice Memo:
TO: J. C. Jones, Supt.
Kasten Mill No. 3
Jim:
Apparently you and I will have to forget what we learned at Tech about not using all-metallic drawing on fine count sliver. Joe's tests at Mill No. 2 show better quality and higher production on his 80's to 100's, on Ideal Drafting, than he ever got on any other system. Recommend you check into Ideal for your combed 60's to 80's right away.
Ed
FROM: E. W. Smith, Gen. Supt.
Feathertouch
DRAFTING

Some mills, which were successfully using Ideal Feathertouch Drafting on carded stock, hesitated to use it for fine counts and for combed yarn because of former prejudice against using metallic rolls on fine counts. Those who conducted tests have uniformly made reports like the one above. Today many of the largest and finest mills are running *all* of their finest counts on Ideal Feathertouch Drafting.

Ideal's patented ball bearing spacing sections keep the rolls perfectly aligned at all times. Free-floating fluted top rolls give only a light feathertouch to the stock. They automatically even out thick and thin places in the sliver and impart a permanent crimp. Ideal High Speed Ball Bearing Drawing* cannot bruise, crush, or cut fibres. Even on the finest counts, Ideal Feathertouch Drafting gives you the highest quality drawing sliver. And Ideal Feathertouch Drafting costs less to buy, less to run, and less to maintain. Write for full information today.

*Patent Nos. 2,610,363; 2,490,544; 2,412,357. Other patents pending.

Ideal Industries, Inc.
Bessemer City, N. C.

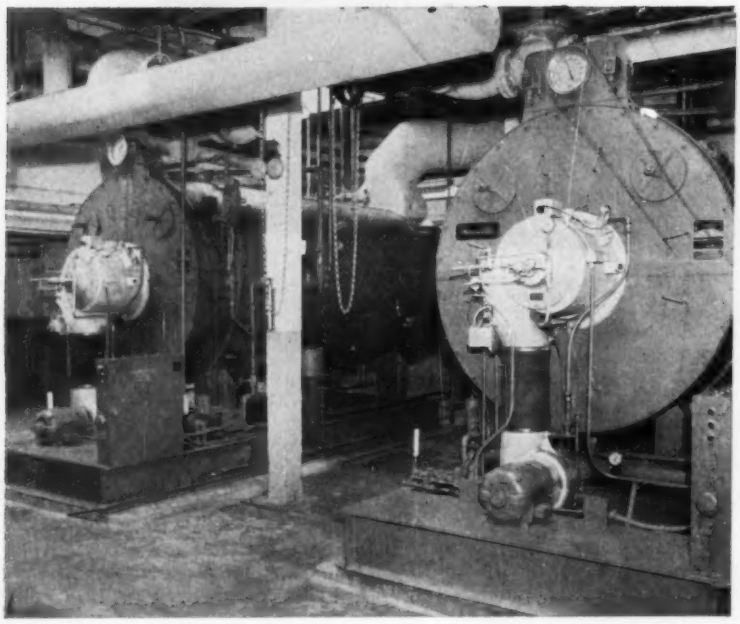
Why a GLOBE® Gum is a preferred size for spun rayon, spun rayon blends and synthetics

Especially developed for sizing spun rayon and blends of spun rayon, Globe Brand Gum de-sizes readily. It forms a smooth, tough size that eliminates considerable breakage on the slasher and loom. Globe Gum delivers the size concentration you require due to its greater uniformity and stability of viscosity.

Globe Gum is manufactured under rigid controls to meet your size requirements exactly.

Free technical service . . . Our technical staff welcomes the opportunity to help you solve your production problems. No cost or obligation on your part. Write today.

CORN PRODUCTS REFINING COMPANY
17 Battery Place, New York 4, N. Y.



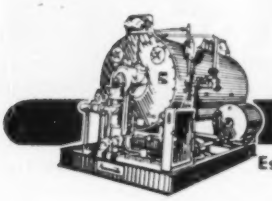
Powermasters Save $9,040 A Year
By Cutting Steam Cost In Half

• These two 200 HP *Powermaster* Packaged Automatic Boilers are saving 50% of steam costs annually for a large clothing manufacturer, while providing hotter, drier steam for processing and heating.

Completely factory-assembled and fire-tested *Powermasters* have world-wide acceptance as dependable producers of low-cost steam or hot water. Now, you can get the cost-saving advantages of *Powermasters* in your plant or building on the O&S Pay-as-You-SAVE Purchase Plan that lets you pay for your new boiler out of its own savings. Here is why steam costs go down when *Powermasters* go in:

★ Low-cost, space-saving installation
★ Instant response to load changes
★ Quick fuel change-overs
★ Clean, dry steam
★ Fully automatic operating and safety controls
★ High fuel economy at all loads
★ Clean, quiet operation
★ Smokeless combustion
★ One source responsibility for complete unit
★ Nation-wide factory-trained representatives
★ Pay-as-You-SAVE Purchase Plan

Write for Bulletin 1220 and have a representative explain why it pays to modernize with *Powermaster*.



Powermaster®
PACKAGED AUTOMATIC BOILERS
In sizes to 500 HP; pressures to 250 psi.
ORR & SEMBOWER, INC.
Established 1885 • Morgantown Road, Reading, Pa.

Personal NOTES ABOUT MEN YOU KNOW

(Continued from page 36)

Verney Corp.'s Peterborough, N. H., finishing plant.

M. Lowenstein & Sons recently announced the appointment of **Stanley A. Black** as vice-president and general manager of Spofford Mills in Wilmington, N. C. New general manager of the Covington (Ga.) Mills is **George Jolley.** In charge of quality control on both cloth and finishing at all Lowenstein mills is **Joseph P. Rulli.**

Lester C. Lowery, who for the past four years has been superintendent of Dixie Knitting Mills, Albemarle, N. C., has been named plant superintendent of Philcord Corp., Monroe, N. C.

Now a consultant in marketing in the New York office of McKinsey & Company is **David L. Jones,** who was formerly manager of the shoe fabric department of Pacific Mills Division of Burlington Industries.

Named to the position of mill manager of Patchogue-Plymouth Mills Corp., Lawrence, Mass., was **Arthur W. Gionet,** formerly general superintendent of Booth Mills in Lowell. **Robert Schwartz,** corporation secretary, had been acting mill manager since the vacancy occurred last April.

Newly elected officers of the National Association of Woolen & Worsted Overseers are: President, **Edward L. Kelton,** Suncook (N. H.) Dole, Inc.; first vice-president, **Emil Tegtmeier,** Angus Park Woolen Co.; second vice-president, **Alfred O. Preuss;** and third vice-president, **Henry C. Laponesee,** Atkinson Spinning.

John Nederosick, formerly overseer of carding at Douglas Woolen Mills, is now with Hayward-Schuster Woolen Mills of East Douglas, Mass., in a similar capacity.

Effective Nov. 1, **C. Eugene Rowe** assumed the duties of secretary and treasurer of Dan River Mills. Mr. Rowe was formerly with Burlington Mills.

James J. Jester has been transferred from the Ware Shoals Division of Riegel Textile Corp. to the Trion (Ga.) Division, where he now serves as superintendent of the weaving

THE WHOLE STORY . . .

DENMAN *Pioneered*

THE RUBBERIZED FABRIC PICKER

Through continuous research and picker improvement Denman has always been "first with the best". Watch Denman closely for *new developments* and the latest in *operating efficiency and economy.*

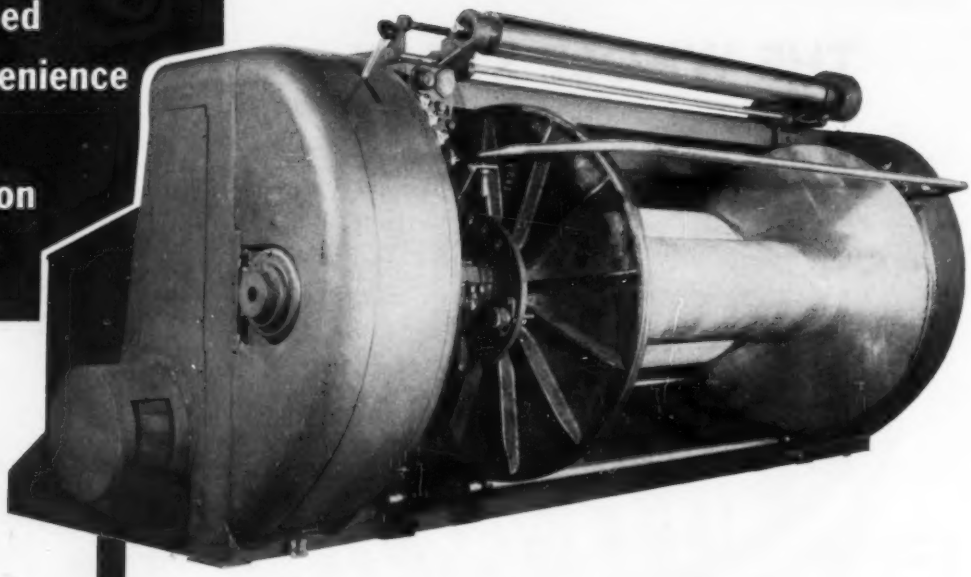
EXCLUSIVE SALES REPRESENTATIVE:

THE Terrell

MACHINE COMPANY, INCORPORATED

Charlotte, North Carolina

Unmatched for Convenience Quality Production



Cocker High Speed Warper for Cotton

Shown here is the 1954 model Cocker Cotton Warper . . . a fitting successor to the other fine Cocker Cotton Warpers which have set the pace for decades.

For Convenience: This warper has patented Air Doffing, patented differential constant yarn speed control, rheostat control to attain any desired operating speed, gradual acceleration from crawl to operating speeds, and individual braking of beam pressure roll and carrier roll by means of rheostat control.

For Quality: Spindle driven driving from *both ends* of beam to assure even distribution of load in starting and stopping, and control of density of yarn on beam at all times by means of air operated pressure roll. This Cocker Cotton Warper has no equal in the smoothness of its operation.

In Production: This new Cocker Cotton Warper is practically vibrationless at speeds up to 1000 yards per minute. It is made to take beam flange diameters up to 40 inches.

Pre-determining Counter Clocks, Electric Speed Indicators, and Combs are standard equipment on this and all other Cocker Warpers.

Write or wire for full information.

THE LEADER
COCKER
AROUND THE WORLD

Machine and Foundry Co., Gastonia, N. C.

WORLD'S LARGEST DESIGNERS AND BUILDERS OF COMPLETE WARP PREPARATORY EQUIPMENT

Springs Mills

guards quality, ups production of famous

SPRINGMAID SHEETS

with

Curtiss-Wright Marquette

ANTI-FRICTION

SPINDLES

Springs Mills provides America with extra sleeping comfort, between fine-quality SPRINGMAID sheets. And behind this quality story are anti-friction roller bearing textile spindles manufactured by the Marquette Metal Products Division of Curtiss-Wright. Springs Mills uses more than ½ million of these spindles, to obtain the highest possible quality, and most uniform yarn for SPRINGMAID sheets.

Curtiss-Wright Textile Spindles are designed around what is known as a full-floating footstep bearing, which corrects for irregularities in strand winding, providing a yarn of uniform strength and thickness. By contrast to ordinary, plain-bearing spindles, these units guard quality through every split second of production, while performing at higher speeds. Yarns of every denier are improved by this important development in spindles.

Curtiss-Wright is the nation's largest manufacturer of anti-friction textile spindles . . . the only manufacturer of a complete line of spindles for all fibers, natural and synthetic. Millions of them are in use today.

MARQUETTE METAL PRODUCTS DIVISION

CURTISS-WRIGHT

CORPORATION • CLEVELAND, OHIO

Personal NOTES
ABOUT MEN YOU KNOW

mill. * * * **Clyde C. Cobb** has been promoted to managerial assistant of the Trion Division, and **R. E. Coleman** has been promoted to general superintendent of the cotton mill department.

A tribute to **Edward T. Pickard** was delivered at the American Textile Machinery Association's banquet honoring the National Council for Textile Education. Mr. Pickard, who was appointed head of the Textile Division of the U. S. Department of Commerce in 1921, was cited "for the vision and the ideals he has brought into being through the years of unselfish and devoted service to textile education."

The Textile Society of Canada, Eastern Division, with headquarters at 1420 Sherbrook St., West, Montreal, Quebec, recently elected the following officers: **E. G. James,** president; **S. J. Hungerford,** honorary or immediate past president; **G. C. Tattersfield,** first vice-president; **Eric W. Young,** second vice-president; and **A. H. Wood,** secretary-treasurer.

Gov. Luthur Hodges of North Carolina has appointed **William P. Saunders** of Southern Pines as director of the Department of Conservation and Development, to fill the vacancy left by Ben E. Douglas, who resigned. Mr. Saunders retired from the presidency of Robbins Mills, Inc., last summer.

Earle R. Stall of Cone Mills Corp., Greenville, S. C., has been elected a member of the executive committee of the J. E. Sirrine Textile Foundation.

George W. Pierce has been appointed executive director of the tricot and circular knit finishing division of American & Efird Mills,

Mr. Pierce

Inc., with headquarters in Mount Holly, N. C. He was formerly superintendent of the Fountain Inn, S. C., plant of Julius Kayser & Co., Inc. Named assistant to Mr. Pierce was **Robert Patterson.**

Robert T. Stevens, president of J. P. Stevens & Co., Inc., and former Secretary of the Army, received the annual textile award of the New York Board of Trade at a luncheon in his honor on Nov. 17 at the Waldorf Astoria. Mr. Stevens was cited for "outstanding achievements, leadership, and service to the textile industry and the nation." * * * Plans for retirement on Jan. 31 have been announced by **Raymond G. Emery,** executive vice-president in charge of cotton and spun fibers division of J. P. Stevens & Co., Inc. Mr. Emery will continue as a director of the company and as such he will be available in an advisory capacity during the year.

The West Point (Ga.) Manufacturing Co. has elected the following officers for its three subsidiaries, Dixie Cotton Mills, Columbus (Ga.) Manufacturing Co., and Equinox Mill:

(Continued on page 175)

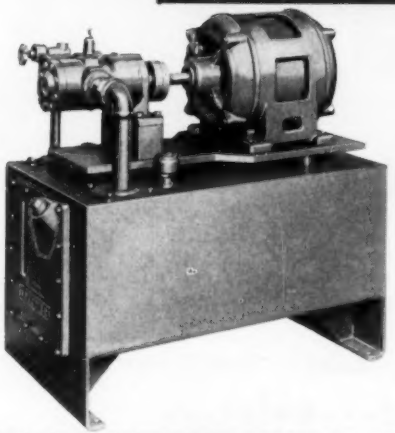
GREAT NAMES
in the textile industry
RELY ON USTER
for quality control

Permission for this use of each trademark was granted us by the parent company.

BETTER products FASTER

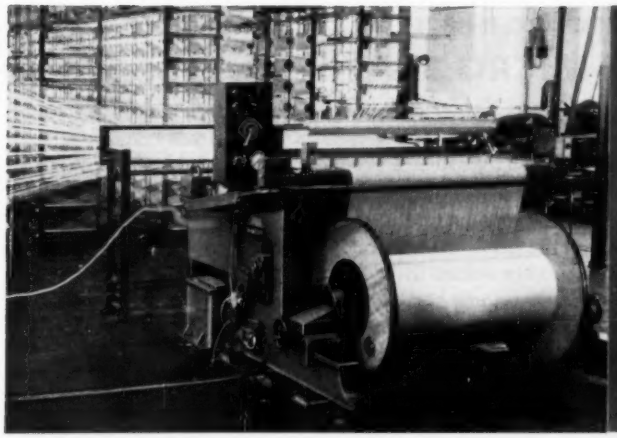
When Your Textile Machinery has

VICKER Hydraulic Power Units



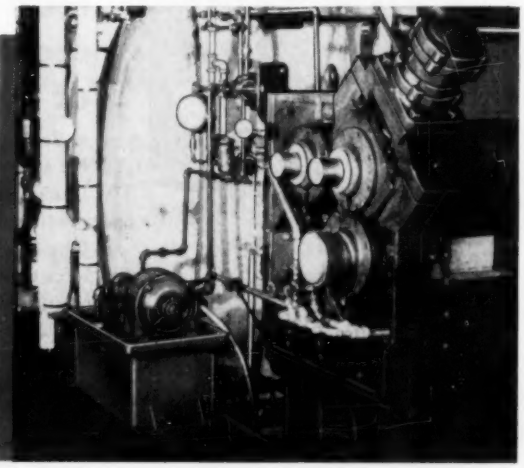
Dependable and practically maintenance-free, Vickers Hydraulic Power Units are a compact self-contained power source for hydraulic systems on a wide variety of textile machinery. They frequently simplify design and save installation costs. Many are standard stock units while others are individually designed for the machines they serve.

Vickers Hydraulics has numerous additional advantages for the user and the builder of textile machinery. Note applications below and then ask our nearest Application Engineering Office for a copy of Textile Bulletin 54-66.



WARPING UNIT

Delivers larger warps of uniform density. Stepless control of beam against press roll prevents scuffing. Vickers Hydraulic System is completely adjustable to meet all conditions. Accommodates beam heads up to 40" diameter.



HIGH TEMPERATURE CONTINUOUS DYEING MACHINE

Provides faster continuous dyeing by dye bath at temperature above atmospheric boiling point in pressure vessel. Cloth passes in and out between rolls that form pressure seal. Nip pressure between rolls is provided and held uniform by Vickers Hydraulics.

FOR FURTHER INFORMATION *Ask For* BULLETIN 54-66

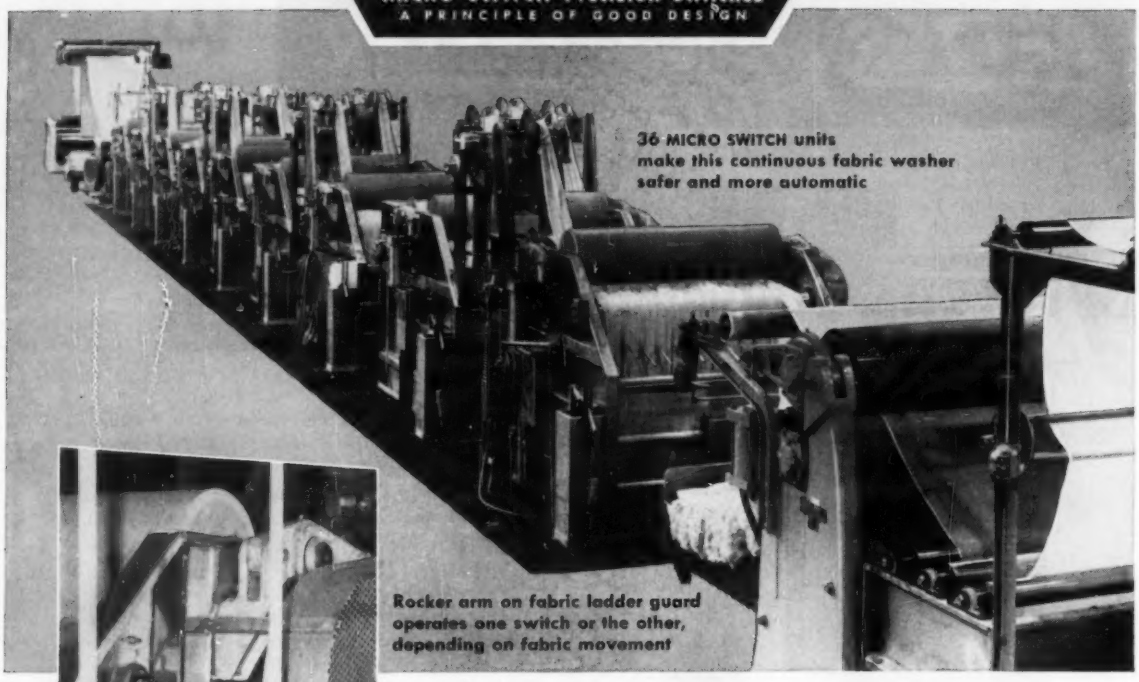
VICKERS Incorporated

DIVISION OF SPERRY RAND CORPORATION
1554 OAKMAN BLVD.
DETROIT 32, MICH.

Application Engineering Offices: • ATLANTA • CHICAGO • CINCINNATI • CLEVELAND • DETROIT • HOUSTON • LOS ANGELES AREA (El Segundo) • MINNEAPOLIS • NEW YORK AREA (Summit, N. J.) • PHILADELPHIA AREA (Media) PITTSBURGH AREA (Mt. Lebanon) • PORTLAND, ORE. • ROCHESTER • ROCKFORD SAN FRANCISCO AREA (Berkeley) • SEATTLE • ST. LOUIS • TULSA • WASHINGTON • WORCESTER
IN CANADA: Vickers-Sperry of Canada, Ltd., Toronto

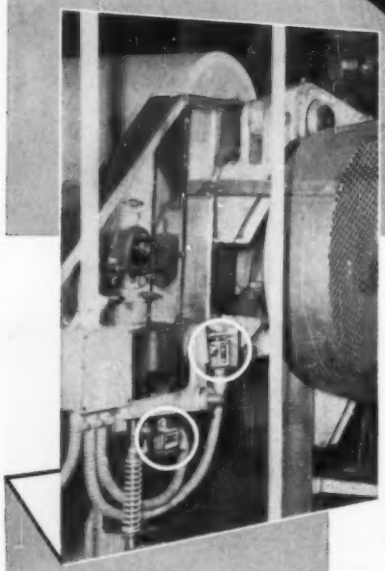
Engineers and Builders of Hydraulic Equipment Since 1921

MICRO SWITCH Precision Switches
A PRINCIPLE OF GOOD DESIGN



36 MICRO SWITCH units make this continuous fabric washer safer and more automatic

Rocker arm on fabric ladder guard operates one switch or the other, depending on fabric movement



Sealed plunger switch protects contacts from dirt and moisture

High speed fabric washer made faster... safer... more automatic... with help of 36 MICRO SWITCH switches

• Four MICRO SWITCH precision switches on each of these nine tubs provide safety shut-offs to prevent accidents to operators and materials. The Laxloop Continuous Washer, a product of Riggs and Lombard, is an exceptionally efficient machine for high speed washing of all types of fabrics.

The four switches are located at strategic points so that any tie-up, tangle or other malfunction will instantly result in stopping the machine before any damage may occur. In addition, the switches operate a light on the control board to show the exact trouble spot.

Riggs and Lombard engineers selected MICRO SWITCH precision switches because they could be operated with a minimum of travel, were positive and dependable in action and sufficiently enclosed to be resistant to moisture.

MICRO SWITCH products can make your equipment safer and more automatic, too. The switch you require may need entirely different characteristics than the ones shown here. Whatever your switch problem, MICRO SWITCH engineering service can cooperate with you and your design staff in a way to save time and money. Why not call your MICRO SWITCH branch office today?

A complete line of snap-action and mercury switches

MICRO SWITCH provides a complete line of extremely reliable, small-size, high-capacity, snap-action precision switches and mercury switches. Available in a wide variety of sizes, shapes, weights, actuators and electrical characteristics. For all types of electrical controls.

MICRO SWITCH

A DIVISION OF MINNEAPOLIS-HONEYWELL REGULATOR COMPANY

In Canada, Leaside, Toronto 17, Ontario • FREEPORT, ILLINOIS

HONEYWELL

Let's get together on your bleaching problems . . .

Here's how Du Pont's Complete Bleaching Service can help you

Whatever you bleach—cotton, wool, rayon, synthetics or blends—Du Pont can help you maintain top efficiency by offering you this complete range of textile bleaching services:

ON-THE-SPOT HELP with any immediate bleaching problem.

SPECIAL MODERNIZATION SERVICE to help with your expansion plans.

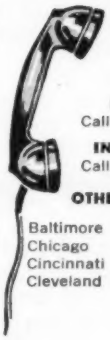
CONFIDENTIAL BLEACHERY SURVEY to help maintain or improve bleaching efficiency.

TECHNICAL BULLETINS AND BOOKLETS to help you keep up with developments in the field.

BULK-STORAGE SYSTEMS to help you buy and store peroxide in money-saving quantities.

TOP-QUALITY BLEACHING AGENTS to give you uniform bleaching results.

FOR FULL DETAILS call your nearest Du Pont District Office or write: E. I. du Pont de Nemours & Co. (Inc.), Electrochemicals Department, Wilmington 98, Delaware.



CALL DU PONT FOR PEROXIDES AND A COMPLETE TEXTILE BLEACHING SERVICE

IN BOSTON Call HAncock 6-1714

IN NEW YORK Call LOngacre 3-6440

IN CHARLOTTE Call FRanklin 5-5561

IN PHILADELPHIA Call KIngsley 5-1900

OTHER DISTRICT SALES OFFICES TO SERVE YOU:

Baltimore	Corpus Christi*	Kansas City*	Oklahoma City*
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Cleveland	Houston*	Odessa, Texas*	Wichita*

Export Division, Wilmington 98, Del.

*Barada & Page, Inc.

DU PONT
REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

DU PONT PEROXIDES

ALBONE® hydrogen peroxide, 35% and 50%

PERDOX® sodium borate perhydrate

SOLOZONE® sodium peroxide

SODIUM PERBORATE TETRAHYDRATE

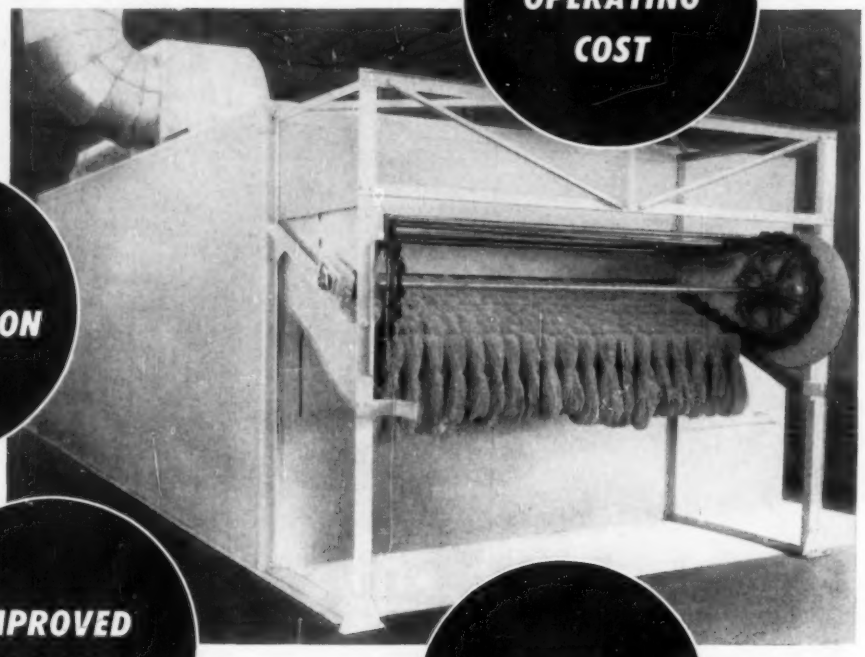
Put a PROFIT in your yarn drying!

LOW OPERATING COST

EASIER INSTALLATION

IMPROVED HOUSING

RAPID DRYING



Proctor Automatic Skein Yarn Dryer with Two-Way air circulation, drying dyed carpet yarn.

PROCTOR DRYERS for skein yarn

Regardless of your output, there is a Proctor Yarn Dryer with the right capacity to make your drying profitable. Truck Dryers for skeins and cakes, or Automatic Dryers for continuous operation, both feature controlled air circulation to provide the *greatest drying uniformity obtainable.* Cotton, wool, silk, or synthetics can be dried at fastest possible rates—show substantial savings in time, labor, and steam requirements. And, as with all Proctor equipment, you can depend on performance guaranteed in terms of the finished product produced. Investigate these profit opportunities now—write today for latest information bulletins.

WRITE FOR DETAILS. PROCTOR & SCHWARTZ EQUIPMENT FOR THE TEXTILE FIELD

AUTOMATIC BLENDING SYSTEMS • WEIGHING FEEDS • PICKERS • SHREDDERS • BALE BREAKERS • SYNTHETIC CARDS • GARNETTS • DRYERS FOR FIBROUS MATERIAL • YARN DRYERS • HOT AIR SLASHER DRYERS • CLOTH CARBONIZERS • ROLLER DRYERS AND CURERS • LOOP AGERS FOR PRINT GOODS • TENTER HOUSINGS • OPEN-WIDTH BLEACH SYSTEMS FOR WOVEN FABRICS • MULTIPASS AIRLAY DRYERS • NYLON SETTING EQUIPMENT • CON-O-MATIC WASHERS • CONTINUOUS BLEACH SYSTEMS FOR PRODUCING TUBULAR KNITS • EQUIPMENT FOR "REDMANIZED" SHRUNK-TO-FIT FABRICS • CARPET DRYERS

Proctor

PROCTOR & SCHWARTZ, Inc.

Manufacturers of Textile Machinery and Industrial Drying Equipment
Philadelphia 20, Pennsylvania

NOW! a New Low Cost, Low Calcium Brine!

Available in Bags and Bulk

● Saves money on sequestering agents! ● Eliminates streaks and off-shading! ● Increases color intensity!

MORTON "PCB" is a new, patented rock salt product. It contains southern rock salt, plus special chemical compounds in pelletized form to give a controlled dissolving rate. The purpose of this combination is to keep harmful calcium deposits from going into solution, and thus eliminate them from the brine.

As the chart below shows, "PCB" Rock Salt brine contains approximately 80% *less calcium* than brine made with untreated rock salt. (The less than 200 PPM calcium in "PCB" brine will not precipitate.) What's more, "PCB" can be used in your present rock salt dissolving equipment without additional construction or extra labor.

"PCB" is specifically recommended when brine is used in dyeing rawstock, package, beam, beck or jig with either sulphur, direct or naphthol dyes. ("PCB" brine also can be used effectively in your water softener.)

ORDINARY ROCK SALT BRINE AVERAGES 800 PPM	
PCB ROCK SALT BRINE AVERAGES 200 PPM	

PPM Calcium in Brine

Brine made from ordinary rock salt contains approximately 4 times more calcium than brine made with new "PCB".

"PCB" Brine

● Improves crock fastness with naphthol dyes ● Increases color intensity where sulphur dyes are used ● Results in softer finishes, more even shades ● Saves money on sequestering agents ● Aids in retarding corrosion ● Is far less expensive than brine produced from purified low calcium evaporated salt.

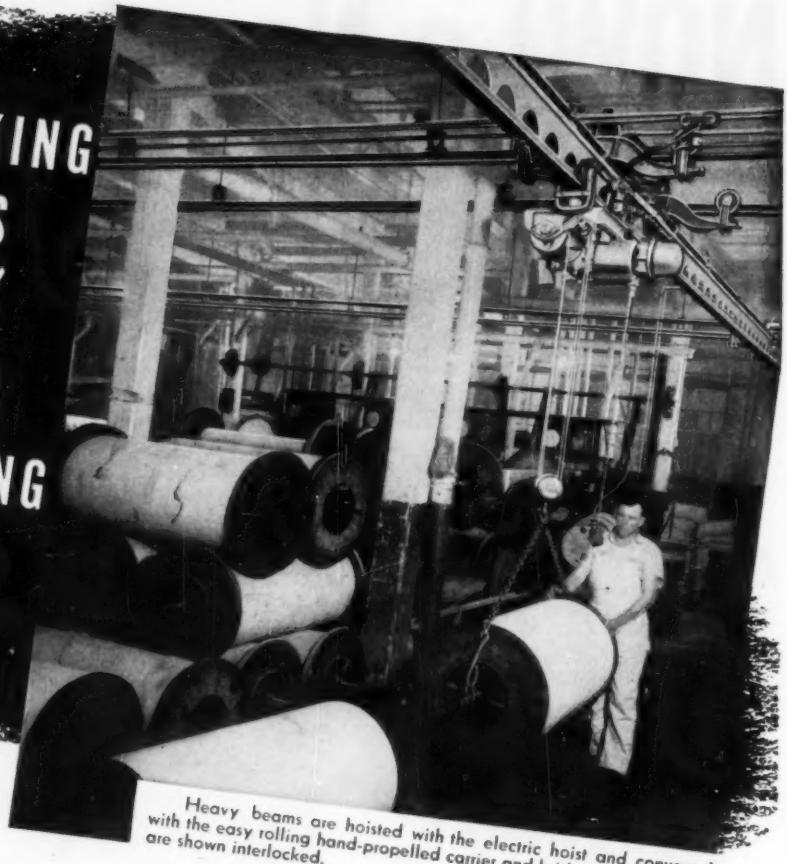
FREE! Let a Morton Brine Engineer take a sample of your brine. He'll have it analyzed in Morton's laboratory and tell you how much you can reduce the calcium content by using "PCB" Salt.

MORTON SALT COMPANY
Industrial Division, Dept. TI-1
120 S. LaSalle Street, Chicago, Illinois

☐ Please send me your free booklet on "PCB."
☐ I would also like a Morton Brine Engineer to make an analysis of the brine in my plant.

Name_____
Title_____
Company_____
Address_____
City_____ State_____

INTERLOCKING BRIDGES *Speed* BEAM HANDLING



Heavy beams are hoisted with the electric hoist and conveyed with the easy rolling hand-propelled carrier and bridges. Two bridges are shown interlocked.

SIMPLE, inexpensive, hand-propelled transfer bridges, as illustrated, provide hoisting and conveying service for the entire floor area of the slasher room bays in which they operate. Interlock mechanisms on the ends of the bridges permit locking two or more bridges together so that a carrier with its load can be transferred from one to the other.

Because of ball-bearing wheels and smooth, raised, flat track treads, extremely little effort is required to propel either a bridge or carrier. Cleveland Tramrail equipment has a guaranteed starting effort of 15 lbs. and running effort of 10 lbs. per ton weight.

Cleveland Tramrail has been tried and proven in dozens of textile mills of all kinds and sizes. It is lifting and conveying cotton, wool, rayon, nylon and silk in every stage of preparation wherever the weight is more than one man can handle.

If you are interested in improved efficiency and many other important advantages that are possible with Cleveland Tramrail, you owe it to yourself and to your company to get the facts.

GET THIS BOOK!
BOOKLET No. 2008. Packed with valuable information. Profusely illustrated. Write for free copy.

CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
2857 East 287th Street, Wickliffe, Ohio

CLEVELAND TRAMRAIL
OVERHEAD MATERIALS HANDLING EQUIPMENT

Hycar Latex treatment for denim granted Good Housekeeping's guaranty seal

REPLACEMENT OR REFUND OF MONEY
Guaranteed by Good Housekeeping
IF NOT AS ADVERTISED THEREIN

NO NEED TO WASH JEANS SEPARATELY!

New Discovery! **Denim Sized with Hycar Latex Improves Garments 3 Ways**

HERE'S washday news. No need to separate these Hycar treated denims from white articles in the same washer load. There is no color transfer to worry about.

These garments now on sale retain the "new goods" feel and appearance after many washings. And they are never "scratchy".

Jeans made from denim treated with Hycar latex give longer wear than ordinary denim.

Garment manufacturers who use this superior denim carry the information on the label. Look for this label when you buy.

For full information, write to Department ET-1, B. F. Goodrich Chemical Company, Rose Building, Cleveland 15, Ohio for names of manufacturers using Hycar treated denim.

B.F.Goodrich Chemical Company

A Division of The B. F. Goodrich Company

Manufacturers — For full information on the Hycar sizing process for denim, write to the above address.

THIS AND SIMILAR ADVERTISING IS NOW BEING PLACED IN GOOD HOUSEKEEPING MAGAZINE BY B. F. GOODRICH CHEMICAL COMPANY

Here it is!

THE NEW DIEHL "BA" POWER TRANSMITTER

For Draper Looms

Exclusive new design features mean... *consistent* quality production... *peak* operating efficiency... minimum maintenance, labor and costs!

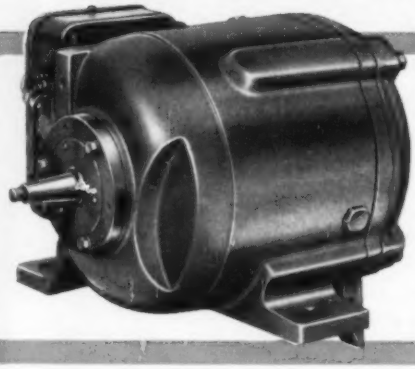


Fig. 1—STREAMLINED FRAME—Note new, smoother frame. Large roomy terminal box simplifies handling leads. Easier to clean—and *keep* clean.

Fig. 2—KINETIC BRAKING ACTION—Larger and more powerful brake with kinetic braking action for rapid, accurate stops. Particularly desirable for center fork detection looms—eliminating defects incident to late stops when weaving synthetic yarns.

The original and only loom power transmitter . . . with new and important improvements! Embodies all the advantages of its famous predecessor plus many outstanding design and construction features never before incorporated in a loom drive!

Over 40,000 Diehl Power Transmitters have been in continuous operation on DRAPER LOOMS — *most of them more than six years!* Their basic design has been time-tested in the toughest proving ground of all—*actual mill use.*

The new Diehl model "BA" Power Transmitter is even *more* compact, *more* streamlined, *more* efficient and *more* easily installed and serviced than its famous predecessor.

It's an inverted-type high inertia motor combined with a fast, positive clutch-brake mechanism. But in addition, the *new* "BA" has exclusive new design features—like the remarkable clutch-actuating bearing mounting... the kinetic braking action . . . the improved unitized clutch-brake assembly. These important advancements mean increased production . . . improved cloth quality . . . lowered operating costs . . . fewer shut-downs.

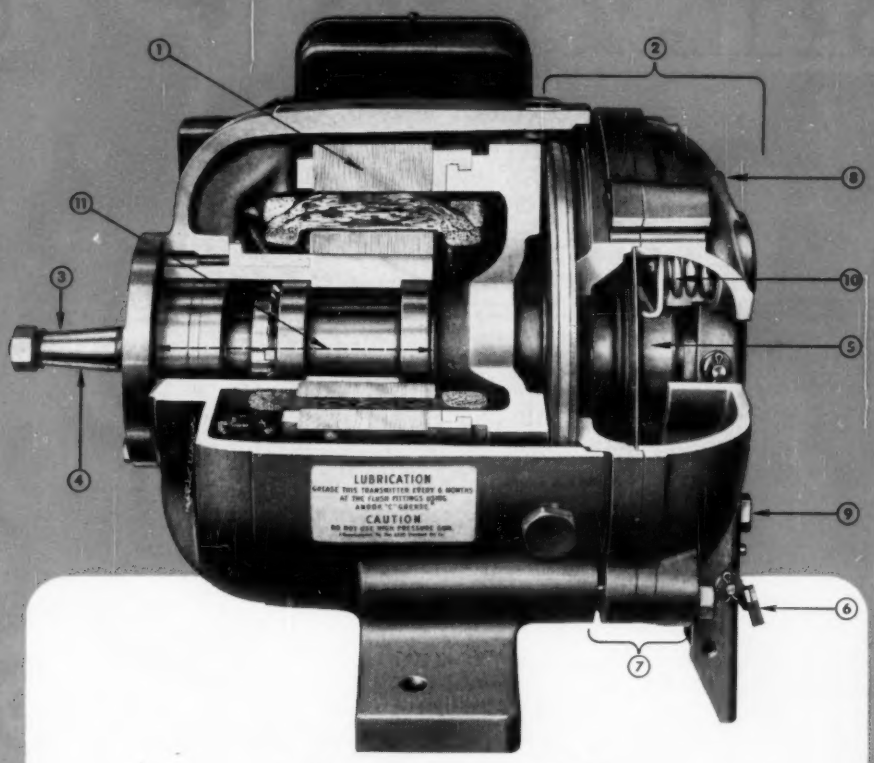
We'd welcome the opportunity to study your application requirements, and show you how the new Diehl "BA" Power Transmitter can effect savings in your mill. Write, wire or phone today for complete information.

DIEHL MANUFACTURING COMPANY

Electrical Division of THE SINGER MANUFACTURING COMPANY

Finderne Plant, SOMERVILLE, NEW JERSEY

ATLANTA • BALTIMORE • CHARLOTTE • CHICAGO • CINCINNATI • DETROIT • MILWAUKEE • NEEDHAM, MASS. NEW YORK • PHILADELPHIA • PITTSBURGH



DESIGN FEATURES

1. High inertia inverted motor provides "stored energy" for smooth, fast starts and positive picking (maximum inertia with minimum size) . . . prevents regeneration.

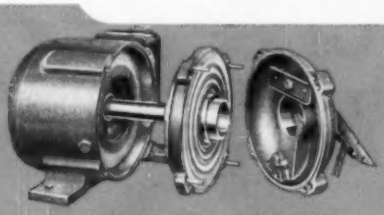
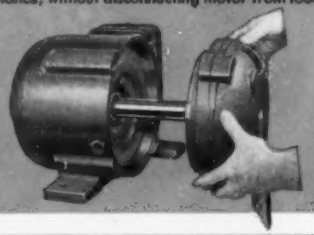


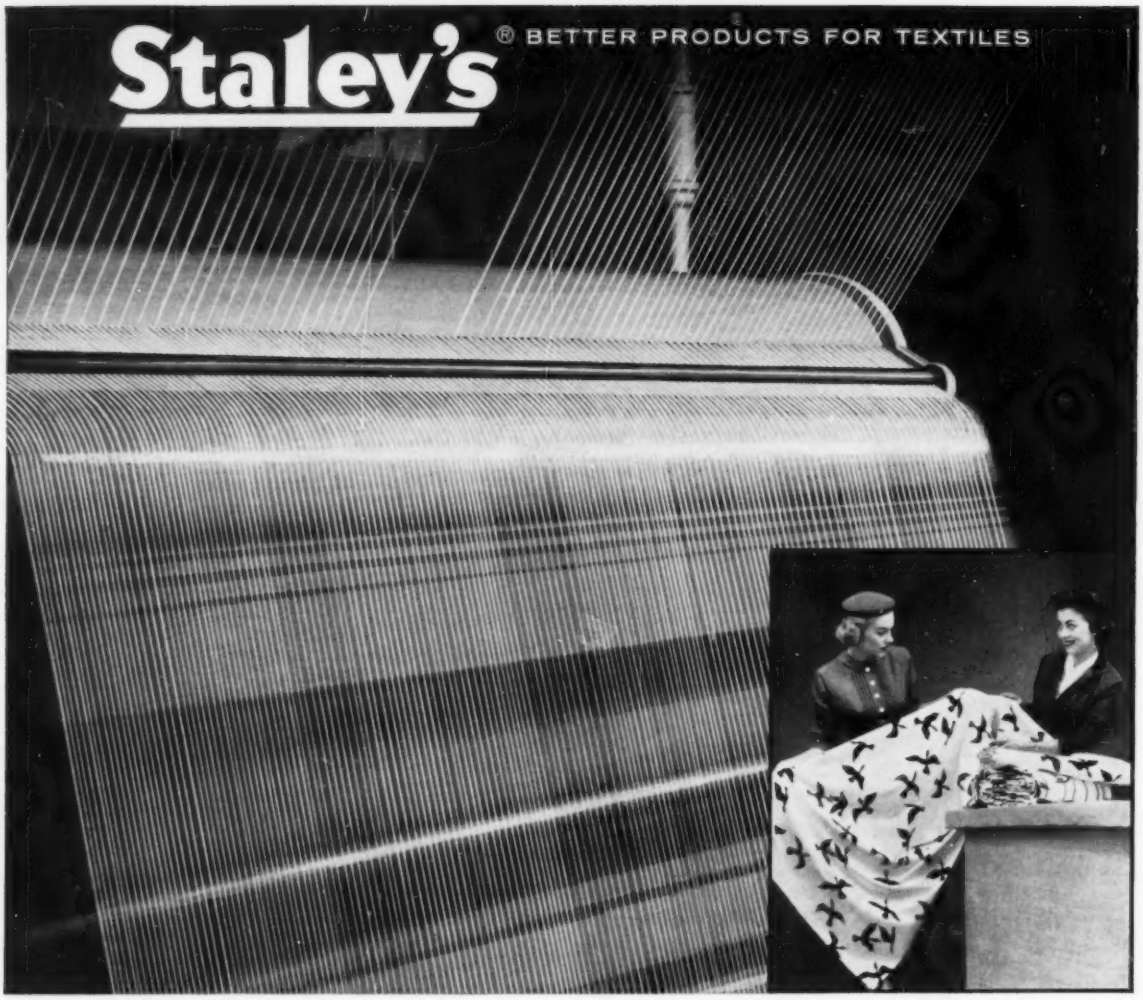
Fig. 3—CLUTCH-ACTUATING BEARING—New diaphragm mounting for frictionless clutch action, positive radial rigidity of bearing . . . eliminates fretting corrosion . . . means full self-alignment of bearing for maximum life.

Fig. 4—UNITIZED CLUTCH-BRAKE ASSEMBLY—Improved and simplified for positive action and ease of adjustment. Automatic clutch compensation eliminates most periodic adjustments for wear. Removes readily as unit for maintenance, without disconnecting motor from loom frame.



plus these outstanding New Features

2. **CLUTCH-BRAKE ASSEMBLY**—Improved, simplified. Readily removable as a unit. (See Fig. 4)
3. **PINION**—Free accessibility for installation and maintenance.
4. **SHAFT**—Large diameter, alloy steel, heat treated—assures long life, eliminates need for outboard bearing.
5. **CLUTCH-ACTUATING BEARING**—A strikingly new and improved method of mounting. (See Fig. 3)
6. **KINETIC BRAKING ACTION**—for rapid, accurate stops. (See Fig. 2)
7. **CLUTCH AND BRAKE ADJUSTMENT**—Simple and convenient. Provides visible check on brake alignment.
8. **CLUTCH-SETTING INDICATOR**—Built integral with unit for instantaneous external checking of clutch setting.
9. **SAFETY LATCH**—Built integral with unit. Prevents accidental engagement of clutch.
10. **CLUTCH-LOADING ASSEMBLY**—Internally located, hence tamper-proof.
11. **SHAFT-END BEARINGS**—Arrangement simplified and improved. Two ball bearings and an extra large roller bearing assure maximum life.



Higher weave-room efficiency...higher profits with Staley's Eclipse Sizing Starches

Southern textile mill cuts costs . . . boosts output with an assist from Staley's technical staff

Low weave-room efficiency was stealing profits from this mill at a fast rate. End breakage in the loom caused dollar loss in machine downtime, lost man-hours, and disruption of production and delivery schedules.

The problem was given to a Staley Technical Sales Representative. After checking conditions carefully, he recommended Staley's Eclipse Starch as a more effective sizing starch, and suggested several changes that would give plant operators closer control over production.

When his recommendations were put into practice, the results were excellent. Weave-room efficiency jumped . . end breakage was cut to a minimum and orders were filled on time. This success is *not* unusual. Your expert Staley Technical Sales Representative can help you solve the problems that are stealing your profits. See him now.

A. E. Staley Manufacturing Company, Decatur, Illinois

Branch Offices: Atlanta · Boston · Chicago · Cleveland · Kansas City · Philadelphia · New York · St. Louis · San Francisco

PRODUCTS FROM CORN
Staley's
AND SOYBEANS

QUALITY TEXTILE PRODUCTS

Dextrins
Pearl Starches
Thin Boiling Starches
Oxidized Starches

News IN BRIEF

Japan Halts Export of Cotton Goods. The Japanese government has temporarily ceased to approve contracts for the export of cotton goods to the United States. The blanket ban on export licenses followed a similar embargo on grey and bleached fabrics, velveteen, and corduroy, and is designed to quiet complaints that Japan is flooding the American market with cheap textiles. American trade circles viewed the move with considerable skepticism, and noted that export licenses previously granted will keep imports from Japan arriving in a steady stream for at least several months.

FTC Cites Two Hosiery Firms for Fictitious Pricing. The Federal Trade Commission has begun action against two New York hosiery firms on the charge of using fictitious and exaggerated prices. The complaint alleges that the mills ticketed hosiery with a fic-

titiously high price, but sold it to the retailer at a figure which enabled him to mark over the high price and insert a much lower price, giving the customer the impression that the hosiery was being sold at a bargain rate.

Army May Use Stretch Fabrics. The Army Quartermaster Corps is reported to be considering the use of stretch fabrics in socks, headgear, mittens and gloves, and insets and gussets for garments. Benefits would include reduction in the number of sizes the Quartermaster is required to stock, better fit, and increased comfort and efficiency.

Draper Progresses With Shuttleless Loom. " . . . . dozens of circular, electric, pneumatic, hydraulic, rapier, dummy shuttles and shuttleless looms [have been] proposed and tried all over the globe, and 99% of factory woven fabrics [are] made on just this same contraption, modified and refined in a thousand different ways, but fundamentally the same machine . . . . It's pretty well known that we are trying to 'crack the sound barrier,' as it were, with the long dreamed of practical shuttleless loom for the bread and butter single filling fabrics: sheetings, print cloths, spun rayons, etc. . . . we are not sure . . yet that we have got the answer—that the shuttleless loom we have developed will justify itself in competition with the conventional loom of today. But in any event we are convinced that nothing like this is going to come out of the blue—if it comes at all, it will be after many years and millions of dollars of effort in which only the loom manufacturers of this country have the back-ground, and the willingness, and the cash to invest . . . . we try and observe and analyze every radically new system of weaving that is turned up in the world and . . many times a careful research analysis will reveal a fundamental weakness that really had doomed the scheme before it was undertaken and had thousands of dollars spent on it by inventors and backers who just didn't know the facts of life in this field."—*Thomas H. West, president, Draper Corp.*

Industry Needs Better PR. The most urgent future requirements of the southern textile industry are an enlightened program of employee relations, community relations, and public relations, accord-

ing to E. T. Barwick, president of the Tufted Textile Manufacturers Association. Specifically, Mr. Barwick suggested that textile manufacturers go on record favoring direct support of schools, hospitals, and other community needs, as well as such employee benefits as disability benefits, health insurance, and better retirement programs.

NE Mills Seek Rail-Rate Concession. New England mills are asking freight rate reductions similar to those recently granted southern mills, and met recently to map plans for securing a restoration of the traditional freight rate differential between New England and the South. The meeting also considered a program to ship cotton to New England by water instead of rail.

Meet to Discuss Hosiery Minimum Wage. The dollar minimum wage, which becomes effective March 1, 1956, will be the subject of a meeting sponsored by the New York Association of Hosiery Mill Salesmen and the National Association of Hosiery Manufacturers, to be held at the Engineering Societies Building, New York, N. Y., from 5 PM to 7 PM, January 10, 1956. A panel of authorities will discuss the question from the

Every new fiber developed brings to the textile plant both opportunities and problems. New physical characteristics of the fibers usually require changes in processing equipment. Hundreds of variations have been made in Herr Flyers to accommodate the new yarns. Many special Herr Conical Ring and Traveler combinations have been produced. If you have a spinning or twisting problem — Let us help you.

HERR Manufacturing Company, Inc.
310 Franklin St., Buffalo, N. Y.

FOR SPINNING AND TWISTING WORSTED, WOOLEN, RAYON, NYLON, ORLON, FIBERGLASS AND BLENDED YARNS OF ALL TYPES

standpoint of the banker, yarn man, packaging manufacturer, etc., as well as mill men in the women's, men's, and children's and infants' fields.

New Stretch Yarn. A new stretch yarn process developed by Kenneth W. Glace, of Pilot Throwing, Inc., Pilot Mountain, N. C., is a straight-line operation, in contrast with the seven-step conventional method, and is said to be adaptable to existing equipment. Yarn made by the process is called "Glacelon." By Glace's method, the nylon or Dacron is run directly from pirns through a tensioning device to a heat chamber and false-twist spindle, and then without interruption to a take-up bobbin. Equipment for the new process will be made by Gibbs Machine Co., Greensboro, N. C., and will be sold by Textile Equipment Sales Corp., also of Greensboro.

Textile Man Elected to Hall of Fame. Braxton Bragg Comer. founder of Avondale Mills and former U. S. senator and governor of Alabama, has been elected to the Alabama Hall of Fame. He died in 1927.

French Finishing Industry Merges. A far-reaching move to concentrate the French textile finishing industry has been announced by the companies concerned. The largest company in this field, Gillet-Thaon, representing 52 per cent of the French finishing industry, has merged with a number of minor finishers, bleachers, and converters. Before the merger, there were about 250 finishing firms in France, most of them operating on a reduced scale. Two firms were responsible for 64 per cent of the total output.

Short Course in Statistics at N. C. State. The Institute of Statistics at North Carolina State College is sponsoring a seven-day intensive short course in Statistical Methods for Research Workers in Industry and the Physical Sciences, starting February 12, 1956, and running daily through February 18, 1956. Three lecture series will be given, one on elementary statistical analysis, one on regression analysis, and a third on experimental design. Guest lecturers include W. G. Cochran, The Johns Hopkins University; S. L. Crump, University of Rochester; and J. S. Hunter, American Cyanamid Co. A registration fee of $100 will be charged, and enrollment will be limited to the first fifty applicants. Further information may be obtained from the Institute, at Box 5457, Raleigh, N. C.

Wool Week in Charleston. The world premiere of Wool Week, world-wide wool promotion event, was held in Charleston, S. C., in November. Featured during the week were a wool exposition at the U. S. Custom House, wool fashion shows, a display by the Charleston Museum on the history of wool in America, a full-dress parade by the corps of cadets of The Citadel, a sheep grower's forum sponsored by Clemson College, selection of the Princess of Wool, and the Wool Ball. Activities were climaxed by the Citadel-VMI football game. Charleston was picked as the host city for the Wool Week celebration because of its increasingly important role as the seaport serving the rapidly expanding southern wool industry. It is planned to make the celebration an annual affair.

MISS ANNE PATRICK, of Greenville, S. C., is crowned Princess of Wool in Wool Week coronation ceremonies at the Wool Exposition in Charleston, S. C. General Mark W. Clark, president of The Citadel and honorary chairman of Wool Week, puts the crown on her head, and Charles E. Daniel, Daniel Construction Co., places the royal robe on her shoulders.

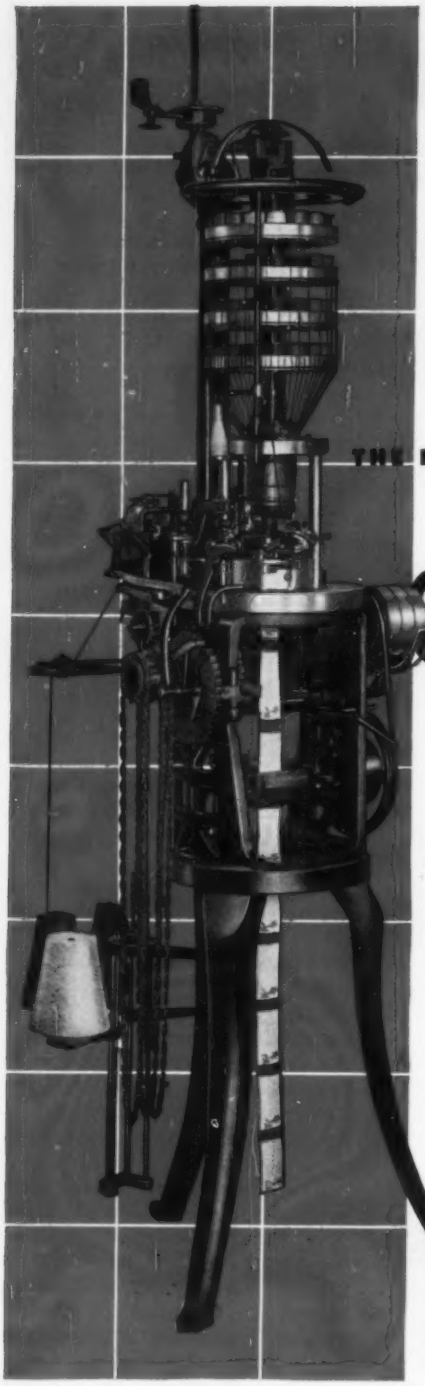
Facts on Faille. Current demand for yarn-dyed faille brought encouragement to a number of specialty mills in eastern Pennsylvania, but proved to be just another gift to Japan, according to a statement by The National Federation of Textiles to the Committee on Reciprocity Information, opposing further reductions on this and other textile items. One mill lost an order on which its best price was $3.70; Japan can land a fabric of equal quality for $2.50, duty paid. Why? U. S. operatives are paid $1.34 to $1.62 at the mill which lost the order; the competing Japanese get about 13.6 *cents* an hour.

Canada Requires Labeling. Imports into Canada of narrow woven or braided fabrics must be marked as to country of origin, effective January 1, 1956. Fabrics affected include those containing rubber yarns, not exceeding 12 inches in width, and boot and shoe laces.

PTI Student Wins Feld Scholarship. A junior at Philadelphia Textile Institute, Raymond F. McCaughey of Hammonton, N. J., is this year's winner of the Martin J. Feld scholarship awarded by the Knitted Outerwear Manufacturers Association, Pennsylvania District.

New British Fiber. British Celanese, Ltd., showed its new nylon 6 fiber, "Celon," for the first time, at the National Fabric Fair, held in London recently. The fiber is known in Germany as Perlon. Present production is principally staple fiber, 1½" for the cotton system and 4" for the worsted system, in 3 and 5 denier.

AATT to Have Local Chapters? The American Association for Textile Technology has named a committee to study the feasibility of establishing regional chapters in the various textile centers of the



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...IN TRUE RIBBED TOPS

THE FIDELITY MULTI-DESIGN RIBBER

Only the Fidelity Multi-Design Ribber offers these advantages for producing unique color within color designs in true ribbed fabrics:

- 120 VERTICAL COLORS to plate over 5 BASIC COLOR HORIZONTAL YARNS
- HIGH SPEED DRUMLESS PATTERNS MECHANISM for FAST, EASY PATTERN CHANGES
- 5-COLOR KNOT TYER AND YARN SELECTOR
- TWO MODELS—For 10-STEP and 25-STEP MULTI-DESIGN PATTERNING
- AVAILABLE WITH SELF CONTAINED MOTOR OR BELT DRIVE

Judge for yourself. See the machine in operation in our showrooms. Or write for samples and complete literature on Fidelity True Ribbed Fabrics made on the Fidelity Multi-Design Ribber.

Designers and Builders of Intricate, Automatic Precision Machines

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EXPORT DEPT.: 25 BEAVER STREET, NEW YORK 4, N.Y. • CANADIAN REPRESENTATIVE: W. J. WESTAWAY CO., LTD., HAMILTON, ONTARIO, CANADA.

country. Chairman of the committee is Albert E. Johnson, of the National Institute of Drycleaning. At present, the membership of AATT is concentrated largely in New York City and vicinity.

Maintenance Show to Include Textile Discussion. The Seventh Plant Maintenance and Engineering Conference, to be held in Convention Hall, Philadelphia, Pa., from January 23 through January 25, 1956, will include a round-table discussion of "Maintenance Problems in Textile Mills," with James W. Ward of Avondale Mills, Sylacauga, Ala., as discussion leader. The discussion will be held from 7:30 to 9:30 PM, Tuesday, January 24.

BBB Warns Against Home Knitting Machine. The Buffalo, N. Y., Better Business Bureau has warned of a home work scheme said to be flourishing throughout the country. Pitch for the scheme is a "Help Wanted" ad in the newspaper, offering a part-time job at home, making hand-knit garments. Wom-

en responding to the ad find that they are required to purchase a knitting machine for $159.50, and to buy their own yarns. The advertiser has no guaranteed market for the finished garments, but takes them on consignment, and the producer receives payment if and when they are sold.

AATCC to Hear Fortess. Fred Fortess, Celanese Corp. of America, will discuss "Arnel—1956," at a meeting of the Philadelphia Section, American Association of Textile Chemists and Colorists, to be held at the Drake Hotel, Philadelphia, Pa., at 6:30 PM, Friday, January 13, 1956.

Mill Failures Decline. There were 50 textile mill failures, with total liabilities of $4,459,000, in the first 10 months of 1955, compared with 90 failures and liabilities totaling $9,559,000 in the same period of 1954.—*Dunn & Bradstreet.*

More Imports Coming. A committee to promote the export of French lace, tulle, and embroidery has been set up in Paris. Development of exports to the United States will be a special subject of study.

Wool Advisory Committee Favors New Research. The U. S. Department of Agriculture's Wool Research and Marketing Advisory Committee at a recent meeting listed the following areas in which

the USDA should conduct new or expanded research: effect of sheep-management practices on amount and kinds of vegetable matter in wool; improvement in resistance to shrinking, improved bleaching, and superior resistance to heat; measurement of fiber properties; effect of preparation for market on grade of grease wool and quality of processed wool; effect of characteristics of grease wool on quality of wool products; effect of merchandising practices in retail stores, and consumer preferences for wool in household furnishings; and improvement of statistical and reporting services of interest to wool growers and processors.

Clothes Make the Man? French statisticians report that the man who doesn't care about clothes actually spends a greater proportion of his income on dress than his more clothes-conscious fellows. They estimate that the average Frenchman, earning about $17 a

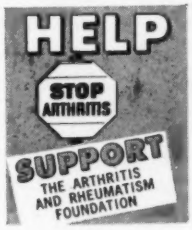
week, spends some $34 a year on clothing, representing two weeks wages; while the wealthy businessman spends a considerably

News in Brief

smaller proportion of his salary to cloak his Gallic hide. According to the statisticians, the better-dressed man pays more attention to his wardrobe and to what he buys than does the less well-off man, who is inclined to buy clothes more often and makes more spontaneous purchases.

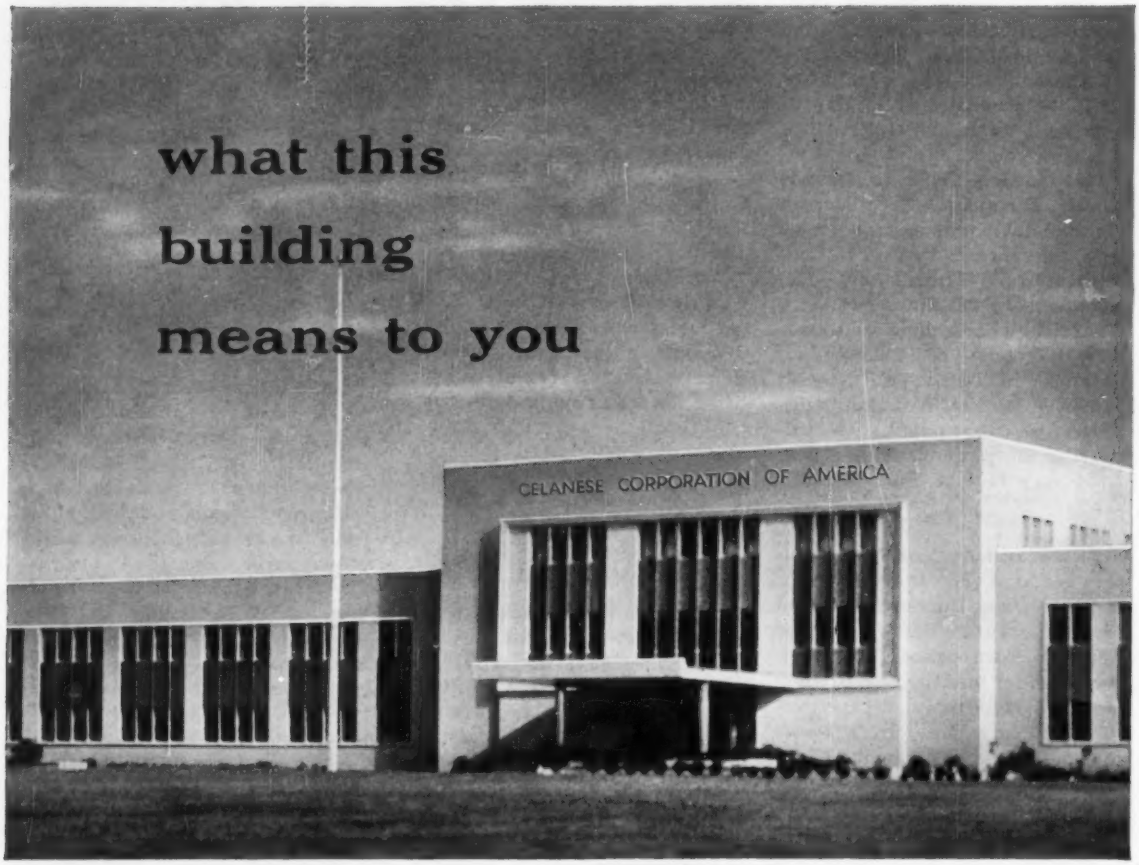
Inflation in Textiles. Inflated fabric domes for housing radar equipment suggest similar construction for other buildings; where large expanses of floor area are desired, with a minimum of interior work, such buildings might offer considerable cost savings. The fabric for use in these buildings should be flexible, but low-stretching, and strong, with low water absorption, good coating adhesion, and resistance to weathering and sunlight.—*Industrial Bulletin,* Arthur D. Little, Inc.

Stevens Urges Fight on Arthritis. In an endorsement to the campaign of the Arthritis and Rheumatism Foundation, J. P. Stevens, Jr., of J. P. Stevens & Co., states, "When we realize that thousands annually are taken from their ma-



chines because of arthritis, it becomes an immense economic and social problem. It would seem fundamental that we should be doing our best to *prevent* the handicapping of our employees."

Measuring Chemical Modification of Cotton. A quick, accurate method for determining the degree and uniformity of chemical modification treatments for cotton, such as acetylation, cyanoethylation, and aminization, has been developed at the Southern Regional Re-



This building is the headquarters of the Textile Division of Celanese Corporation of America in Charlotte, North Carolina. Here are consolidated in one place the sales, spinning, weaving, dyeing and finishing specialists from Celanese operations all over the country.

Facilities have recently been expanded to include an Applications and Product Development Laboratory.

We are proud to say it is the most complete laboratory ever attached directly to a textile industry marketing operation. It will conduct experimental work to help every type of mill operation. Some examples:

1. **The developing of data on temperature controls required in the heat treatment phase of finishing Arnel* triacetate fabrics.**
2. **New constructions possible with Fortisan*-36 rayon.**
3. **Detailed information on chemical, physical, or electrical characteristics of yarn.**
4. **Customer production problems.**

We feel sure a closer understanding and solution of mill problems will result from this consolidation, particularly the ability to see all phases of a problem at the actual time a product is being developed.

This is part of the program of Celanese Corporation of America to provide the best possible help and service to its customers. *Reg. U.S. Pat. Off.

Celanese

CORPORATION OF AMERICA, N.Y. 16.

search Laboratory. Suitable for routine or quality control measurements, the method is based on the measurement of the density of the modified cotton in a "density-gradient column," consisting of a 100- or 250-ml flask with a denser liquid such as carbon tetrachloride at the bottom, and a lighter liquid such as a mixture of carbon tetrachloride and xylene at the top. Since chemically modified cotton becomes denser, the dispersion through the liquid of a large number of particles gives a measure of the degree of substitution of the cotton and the uniformity of the treatment. The liquid is calibrated with hollow glass floats of known density, and a curve for the density of cottons of various degrees of substitution is prepared beforehand by standard methods. Complete details of the method are available from SRRL, at 2100 Robert E. Lee Boulevard, New Orleans 19, Louisiana.

News in Brief

Why American Looms Aren't Pretty. "Our loom hasn't even been

MERCHANDISING NOTES

Kirby Block & Co.'s merchandising manager, Irwin Abraham, recently spoke to the Warp Knit Fabric Manufacturers Group of the National Federation of Textiles, advocating agreement between store buyers and warp knit manufacturers on designations that would describe standards of weight, hand, and quality for tricot fabrics. He also recommended that manufacturers put more fashion in warp knit fabrics.

Celanese Corp. of America has released the results of actual-wear tests conducted last summer on Arnel triacetate sharkskin in nurses' and waitresses' uniforms. Arnel was reported to have been

declared superior to other uniform fabrics by the wearers in wrinkle resistance, retention of fresh appearance, and resistance to scorching and melting in ironing. It compared favorably in stain removal, quick drying, opacity, wear resistance and shape retention, and seam stability.

Charm Tred carpets of Avisco rayon were the focus of a recent two-week promotion in the rug department of Bullock's Downtown, Los Angeles department store, which store officials consider one of their most successful. The promotion included an exhibit featuring a miniature rayon yarn spinning machine, wear testing of carpets, and photos of the processes at Charm Tred's Monticello, Ark., plant.

Indian Head Mills' recent Christmas promotion was the largest single promotion ever carried out

in the textile piece goods field, according to company officials.

Du Pont has announced a labeling program designed to identify the most satisfactory constructions in Dacron marquisette curtains. The labels will be supplied free of cost to manufacturers of marquisette curtains of 70-denier bright Dacron, with a count of 52 x 34 threads or higher.

Dura-Bac, Inc., is using a miniature working model diver patterned after Capt. Nemo of Walt Disney's "20,000 League's Under the Sea" for distribution at trade shows to represent the washability of its new Dura-Bac belt backings.

B. F. Goodrich Chemical Co. has introduced a dinitrile fiber, "Darlan," based on 1, 1 dicyanoethylene, and is now in pilot-plant production at Avon Lake, O. The new fiber is said to have a soft, fur-like texture, and will be used first in women's luxury pile coats.

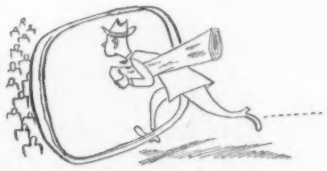
Heberlein Patent Corp.'s president Max R. Held was interviewed recently by Bob Considine on the TV show "Cavalcade of Progress," about the origin, manufacture, and uses of Helanca yarn.

Julee Comforter Manufacturing Co. is offering a Dacron-filled electrically heated comforter, "Electropuff," said to be the first automatic comforter to appear on the market.

Martex Division of Wellington Sears has introduced what is claimed to be a completely new shade of blue, "Persian Blue," unique in the towel field. It is described as a true deep turquoise.

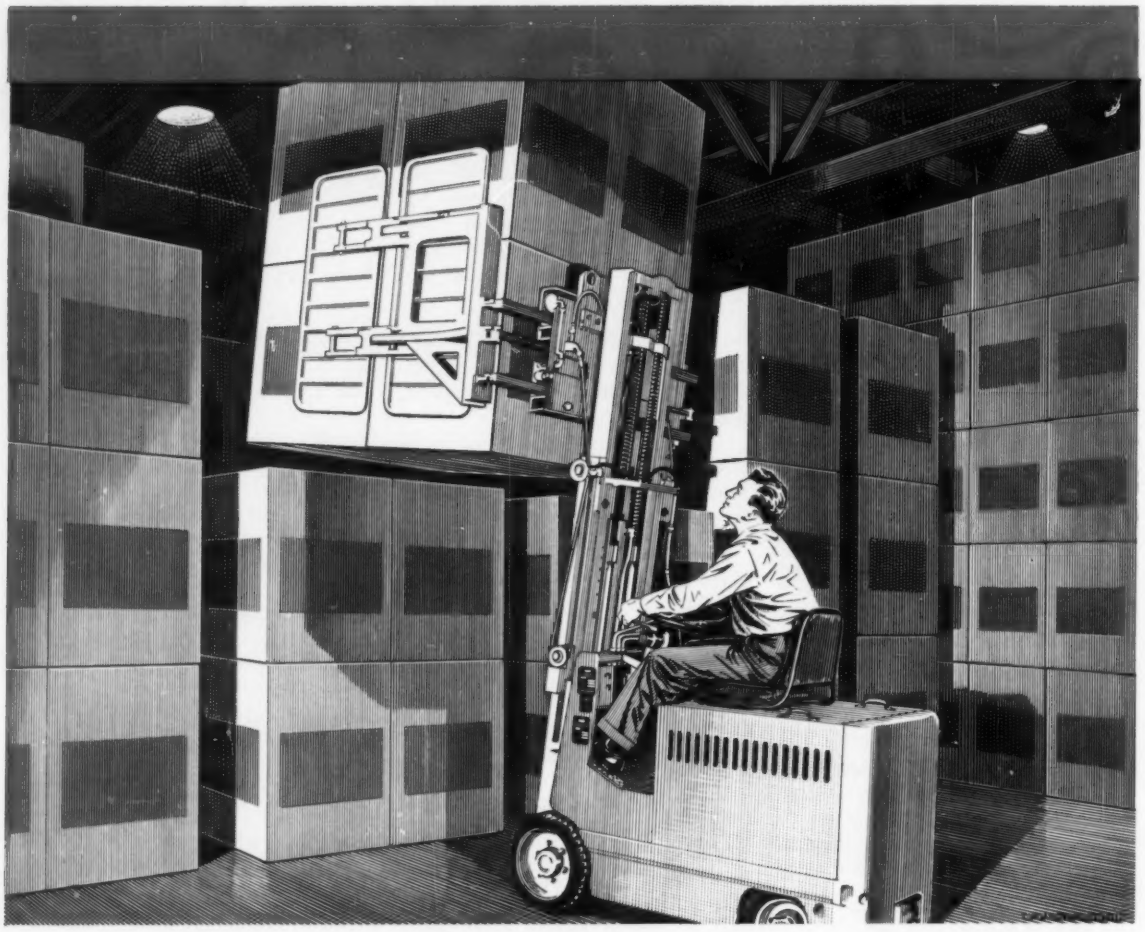
E. Richard Meinig Co. has introduced a brushed nylon tricot made in a fine-wale corduroy-like effect.

J. P. Stevens & Co., Inc., has joined Scott Paper Co. and Aluminium Ltd. of Canada as a sponsor of the "Omnibus" series



on the CBS Television Network, marking the first time that a major network program has been sponsored by a textile firm.

National Cotton Council has announced that National Cotton Week for 1956, which will be held May 14-19, marks the start of the second quarter century for this annual merchandising event. This year's slogan is, "Pick Your Cottons Now—First Choice for You and Your Home—Naturally Fresher, Cooler, Smarter."



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streamlined for eye-appeal—as have many of the European looms —simply because we never could see how this could be accomplished except with increased cost of the loom to our customers and give them anything except the eye-appeal for their money. . . . We are conscious of the desirability of improving the appearance of the loom and are actively working on this problem right now, but what we very positively want to avoid is construction that just looks pretty at the expense of initial cost to the customer or additional work for the fixer, weaver, or battery hand."—*Thomas H. West, president, Draper Corp.*

Ga. Tech Offers Short Course in Statistical Quality Control. During the period March 5-13, 1956, a course in "Quality Control by Statistical Methods" will be conducted at the Georgia Institute of Technology, Atlanta, Ga. For application blanks or further information, write C. H. Taylor, coordinator short courses and conferences, Georgia Institute of Technology, Atlanta, Ga.

Agreement Reached on "Agilon." Deering Milliken Research Corp. and British Nylon Spinners Ltd. have reached an agreement to exchange information and patent rights for the production of Agilon stretch or bulked yarn. The two firms discovered that they were working along similar lines in the development of this type yarn, and that there was a conflict of patent rights in some countries. Licenses to manufacture will be made available by the two concerns.

Pima S-1 Evaluated. The USDA's Southern Regional Research Laboratory has released complete details of an evaluation of the yarn properties and processing performance of Pima S-1, a new commercial variety of interspecies cotton [see TEXTILE INDUSTRIES for April, 1955, pp. 138-139]. Copies of the report are available without charge from SRRL, at 2100 Robert E. Lee Boulevard, New Orleans 19, La.

Canadian Associations Change Address. New address for the Canadian Woollen & Knit Goods Manufacturers Association, Cotton Institute of Canada, Primary Textiles Institute, and Silk and Rayon Institute is 630 Lagauchetiere St. West, Montreal 3, Quebec.

Publications Available. "History of Hosiery," by Milton N. Grass; Fairchild Publications, Inc., Business Book Division, 7 East 12th St., New York 3, N. Y.; price: $10.00. "Fungistatic Capacities of Aromatic Fluorine Compounds in Relation to Cloth-Rotting Fungi, Part I—Fluorinated Quinones and Phenols," PB 111590; Office of Technical Services, U. S. Department of Commerce, Washington 25, D. C.; price $1.75. "Engineering Standards, Multiple V-Belt Drives," revised edition; Multiple V-Belt Drive & Mechanical Power Transmission Association, 27 East Monroe St., Chicago 3, Ill.; and The Rubber Manufacturers Association, 444 Madison Ave., New York 22, N. Y.; price $1.00. "Index and Directory of Fire and Accident Control Codes, Standards, and References," Loss Control Associates, 629 Oakmont Drive, Plattsmouth, Nebraska; price not given.

British Produce Fine Nylon. British Nylon Spinners, Ltd. are reported to be producing a six-denier yarn for the full-fashioned hosiery trade.

New Italian High-Speed Loom. Mass production of the Ripamonti shuttleless loom is scheduled to start during the first quarter of 1956 at the L. C. Works, Turin, Italy, according to a foreign correspondent. Features of the loom, which uses no shuttle, heddles, or reed, are reported to include instant stopping for warp breaks, silent running, a reserve supply of filling from 1-kg yarn packages sufficient for 24 hours operation, and a possibility of using 20 to 24 filling colors. A false selvage is inserted, and there is automatic push-button control and automatic speed change.

Mill to Match Employees' Contributions to Higher Education. The Jefferson Mills, with plants at Jefferson and Crawford, Ga. have announced that during

News in Brief

the fund-raising drives recently launched by both the University of Georgia and Georgia Tech foundations the company will match any employee's gift to either of the two foundations. The company also will advance the employee's portion of the donation pledge. Morris M. Bryan, Jr., company president, observed that state funds are "inadequate to provide the extras necessary to make our leading institutions competitive in every respect with other schools throughout the nation." Consequently, he added, it is his hope that the program launched by The Jefferson Mills "will induce other state industrial firms which have benefited from the teaching and research carried on at these institutions to help the schools with similar plans."

Bulls and Bears. "The growth of our economy may be rapidly catching up with our industry capacity. The potential demand for textile products during the next 10 years may well outrun the visible supplies. The next decade could see the industry enjoying a fair and reasonable return on investment, something it has not achieved in past."—*J. C. Cowan, vice-chairman of the board, Burlington Industries.* * * * "The long-term outlook for the textile industry is bright, but individual companies must use every resource available to them to succeed in the era of tougher competition that lies ahead."—*Edward F. Skinner, vice-president, Meinhard & Co.* * * * "The decrease in your historic share of the disposable income is the most important problem facing the textile and apparel industries. Only eight cents out of every consumer dollar is now spent for apparel and shoes. Spending for that purpose has lagged far behind the increase in consumer income in recent years. Individual companies can improve their competitive positions only by increased product research, better marketing practices and more promotion."—*Walter M. Kelly, executive vice-president, Commercial Factors Corp.*

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(U. S. Patent Nos. 2,516,632; 2,516,633; 2,516,634)

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AN EXECUTIVE Views

THE NEWS IN TEXTILES

Prepared by a man who is closely identified with the textile industry.

Who Will Buy Cotton?

LAST month we commented in this space upon the amazing increase in the production of raw cotton by farmers in certain foreign countries. We pointed out that for 1948-1949 through the 1954-1955 crop year, the production of raw cotton in Nicaragua, for example, had increased 5,833%; in El Salvador 1,875%; in Syria 1,460%; in Mexico 601%, etc.

Now comes a statement from the International Cotton Advisory Committee to the effect that "cotton production is increasing so rapidly in free world countries outside the United States that within the next two or three years there may be no necessity to buy American grown cotton." That statement raises a number of questions, the most important of which is this:

When the time comes that countries outside the United States no longer need to buy American cotton, who is going to buy it? As things stand now, the American cotton farmer is exporting in 1955 about 3.4 million bales of cotton, and the remainder is being bought either by the U. S. A. government or by American textile mills. In short, there are just about three things the farmer can do with his cotton: he can sell it abroad, he can sell it to American mills, or he can "sell" it to the U. S. A. government.

Naturally, when he "sells" it to the U. S. Government, he is really selling it to himself, as a taxpayer, and merely delaying the day of reckoning when somebody, somewhere, must decide what is to be done with all the cotton in government warehouses.

If the International Cotton Advisory Committee is correct, then within the next two or three years the foreign market for raw cotton will be lost. That leaves only the government and the American textile industry as potential customers. The government has more cotton now than it knows what to do with, but it has a tiger by the tail and does not know how to let it loose.

What it all boils down to then is that the domestic textile industry is really the only customer which the American cotton farmer has, or can expect to have in the forseeable future.

Over every mill door and on every cotton farm should be inscribed these words: Whatever hurts raw cotton hurts cotton textiles; and whatever hurts cotton textiles hurts raw cotton.

Strength Through Weakness

A great part of the strength of the American textile industry has always been its great diversity and its highly competitive nature. Made up of thousands of individual units in more than 30 states, its proponents have spoken of the textile industry as the most competitive of all American industries, the one closest to the soil, and the one furthest removed from possibilities of anti-trust law violations. While agreeing with this general premise, we wonder if perhaps in this strength might not also lie a weakness.

The reason for this ruminating is a group of figures we saw the other day which depicted the number of consumer dollars which the textile industry is obtaining each year as compared with the other industries. As a matter of fact, these figures combined the clothing and shoe industry, but, presumably, would be representative of textiles as a whole.

These figures showed that in 1954 the clothing and shoe industry accounted for approximately $20 billion, about the same amount spent for these two items around 1947 and 1948 when we were emerging from World War II. On the other hand, consumers spent far more for other non-durable goods, for durable goods, and services than they did for clothing and shoes. For these "all other" industries and services, consumers spent about $147 billion in 1947 and by 1954 this had risen to $217 billion. In short, the clothing and shoe industry is falling far below everything else in getting its share of the consumer dollar.

Perhaps one reason for this is that the textile industry, at least, is made up of so many relatively small units that nothing like as much is spent on consumer education as is spent by other industries. For example, the people who make electric refrigerators are relatively large companies, and they can afford to spend huge sums in educating the consumer upon his need for a new refrigerator with shelves in the door, or a new refrigerator tinted blue, or one that makes its own ice cubes and defrosts itself. Few textile companies are large enough to come anywhere near such advertising budgets.

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the big seven

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2. Lower Dye Costs
3. Better Crimp
4. Greater Resistance to Abrasion
5. More Resiliency with Less Crushability
6. Greater Strength
7. New Economy for You

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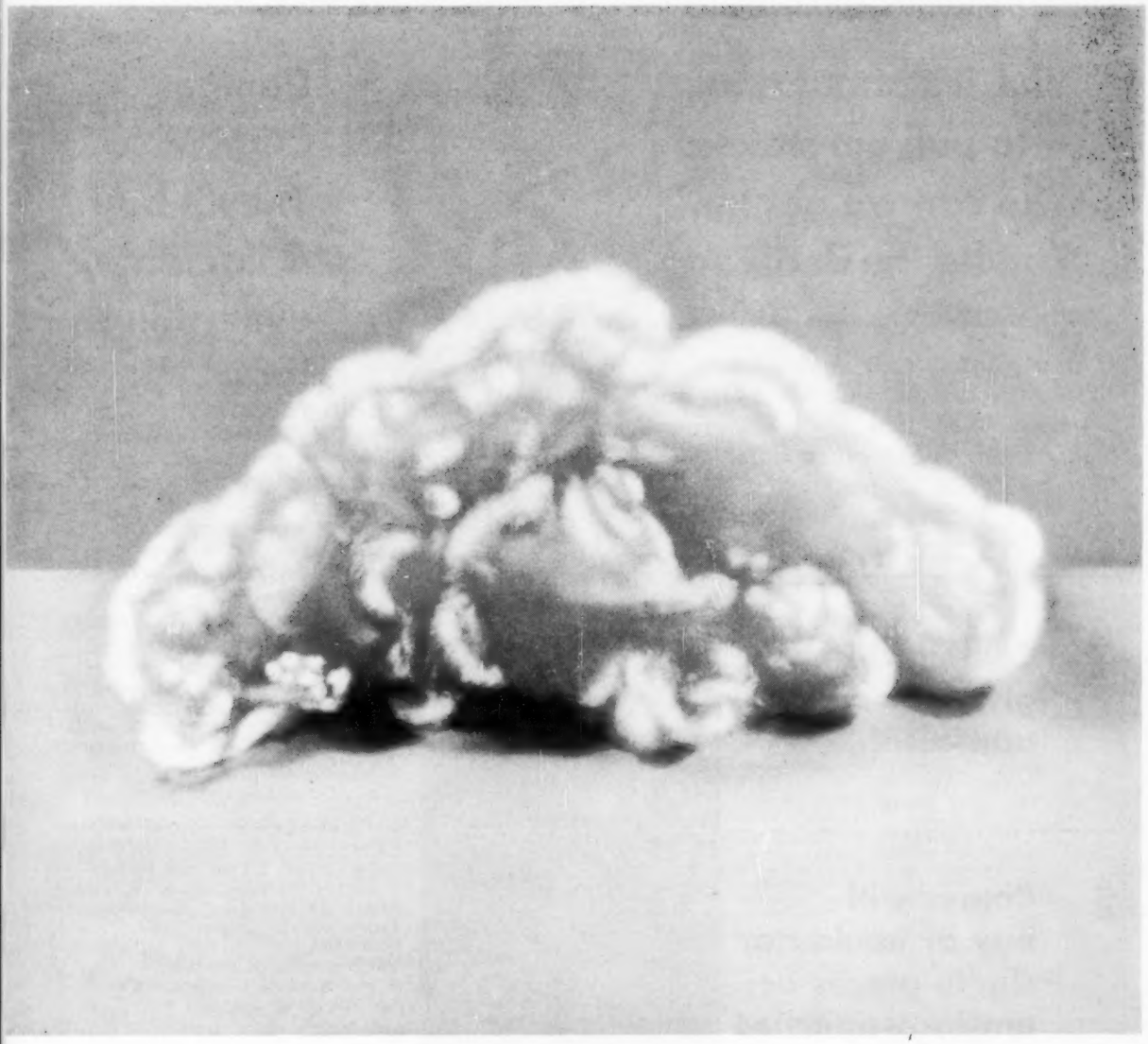

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If your plans call for liquidation, contact Comer first. Comer offers you a simple 3-step plan which has proved highly successful to other mills. It can do the same for you.

1 Comer will give you a fair appraisal

McCanless Mills, Davison, N. C.—Acquired October, 1954; Sold December, 1954. Fast action like this requires experience, coordination and contacts. Let us add you to the list of our satisfied clients.

2 Comer will buy or liquidate, single pieces or entire properties

Mandeville Mills No. 2, Carrollton, Ga.—Acquired January, 1954; Sold May, 1954; A quick call started things moving for this mill. If you're selling. Call Comer first and talk things over.

3 Comer will relocate industry to your former site

Mandeville Mills No. 1, Carrollton, Ga.—Acquired January, 1954; Sold February, 1955. For 22 years Comer has served the textile industry. In 1954 this experience enabled Comer to sell over $4,000,000.00 worth of machinery.

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If you're selling, we're buying. Write, wire or call now.

Comer Machinery Co., Inc.

680 West Peachtree St., Atlanta, Ga., EM. 5682

recently announce its participation in a major network television program, but in its announcement the statement was made that this was the first such participation in the textile industry. Ford, General Electric, Westinghouse, United States Steel, and many other companies spend millions and millions of dollars for the promotion of their individual products. What textile companies have this sort of money to spend?

We are not saying here that all the little companies in the textile business should be swallowed up by big companies and that the big companies, in turn, should merge to form still larger companies. We are not saying anything on either side of this question. What we are trying to do, instead, is to comment upon the fact that while an industry made up of thousands of relatively small companies may have its advantages, there may, at the same time, be several disadvantages.

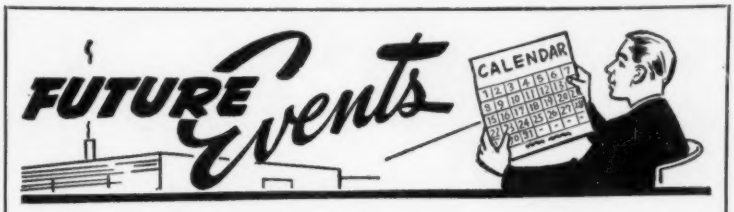
Japanese Are Smart

We have always felt that it would be a grave mistake to underestimate the intelligence of the Japanese people. We believe the validity of this opinion is pretty well backed up by Japan's recent action in clamping a tight lid on exports of cotton goods to the United States market.

Look at it this way: The real furor against Japanese goods did not reach any sizable height until this past June or July. At about that time public announcement was made of the drastic tariff cuts made at Geneva and industry sentiment, as well as public sentiment, began to make itself felt. From July through November the clamor rose higher and higher, so high, in fact, as to be heard in both Washington and Tokyo.

Things got so bad that a delegation of high-ranking Japanese textile manufacturers came to this country and consulted with both government and industry leaders concerning this grave situation. The Japanese said, in effect, that they were concerned for the future of their whole industry and that they did not want to see the Japanese textile industry put all of its eggs in one basket. From our biased and somewhat cynical viewpoint, however, what the Japanese industrialists really came to the United States for was to feel out government, industry, and public

(Continued on page 183)



Date		Event	Location
Jan.	13	Philadelphia Section AATCC	Drake Hotel Philadelphia, Pa.
	20	Hudson-Mohawk Section AATCC	Jack's Restaurant Albany, N. Y.
	21	Quebec Section CATCC	McGill University Montreal, Canada
	23-26	Plant Maintenance & Engineering Show and Conference	Convention Hall Philadelphia, Pa.
	27	New York Section AATCC	Hotel Delmonico New York, N. Y.
	30-31	National Cotton Council annual meeting	Hotel Buena Vista Biloxi, Miss.
Feb.	6	Pacific Southwest Section AATCC	Gourmet Restaurant Beverly Hills, Calif.
	13-15	Textile Div., American Society for Quality Control annual conference	Institute of Textile Technology Charlottesville, Va.
	15-17	7th Cotton Research Clinic	The Carolina Pinehurst, N. C.
Mar.	13-16	ASTM Committee D-13 on Textiles	The Warwick Hotel New York City
	22-23	Textile Research Institute annual meeting	Hotel Commodore New York City
	22-23	Southern Textile Methods and Standards Association	Clemson House Clemson, S. C.
April	5-7	American Cotton Manufacturers Institute annual meeting	Hollywood Beach Hotel Hollywood Beach, Fla.
	5-6	Carolinas Section, American Society for Quality Control	Clemson House Clemson, S. C.
	9-12	National Packaging Exposition	Auditorium Atlantic City, N. J.
	11-13	Alabama Cotton Manufacturers Association annual meeting	Hotel Buena Vista Biloxi, Miss.
	18-19	National Knitted Outerwear Association annual convention	Waldorf-Astoria New York City
	19-21	Phi Psi Fraternity annual convention	A. P. I. Auburn, Ala.
	25-28	Cotton Manufacturers Association of Georgia annual convention	Emerald Beach Hotel Nassau, Bahamas Islands British West Indies
	27-28	Delta Kappa Phi Fraternity annual convention	Georgia Tech Atlanta, Ga.
May	2-3	The Fiber Society, Inc.	Clemson House Clemson, S. C.
	4	The Underwear Institute annual convention	
	14-19	National Cotton Week, sponsored by National Cotton Council	
June	5-7	Textile Seminar, sponsored by Textile Technical Federation of Canada	Queens University Kingston, Ontario
	14-16	National Association of Hosiery Manufacturers annual meeting; also Hosiery Industry Conference	Hotel Roanoke Roanoke, Va.
	17-22	ASTM annual meet and apparatus exhibit	Chalfonte-Haddon Hall Atlantic City, N. J.
	21-23	Southern Textile Association annual convention	Mayview Manor Blowing Rock, N. C.
Sept.	6-7	The Fiber Society, Inc.	The Warwick Hotel New York City
	10-15	Perkin Centennial	Waldorf-Astoria New York City
	13-15	American Association of Textile Chemists and Colorists annual convention	Waldorf-Astoria New York City
Oct.	1-5	Southern Textile Exposition	Textile Hall Greenville, S. C.
	10-12	North Carolina Textile Manufacturers Association annual meeting	The Carolina Pinehurst, N. C.
	16-19	ASTM Committee D-13 on Textiles	The Warwick Hotel New York City
Nov.	27-30	National Chemical Exposition (ACS)	Public Auditorium Cleveland, Ohio

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Package Dyeing Stretch Nylon Yarn in Muffs

BY HERBERT GIRARD
Director of Research and Development
Central Yarn and Dyeing Co.

EXCLUSIVE

THE INCREASED consumption of yarn-dyed stretch nylon has been facilitated by the present method of dyeing the yarn in "muff" form, where the finished grey yarn is skein wound, and the skeins then shrink into what appears to be a muff of crimped and relaxed filaments. These muffs, or relaxed skeins, are then shipped to the dyer, where they are dyed in the same form and then rewound to cones ready for use in knitting.

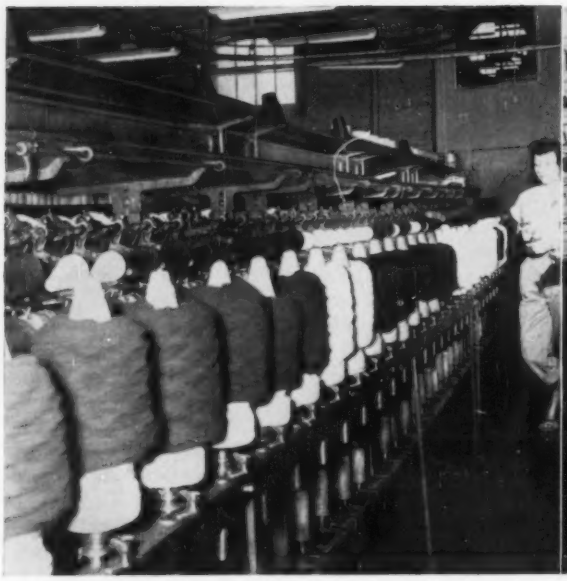
Advantages of "Muff" Dyeing. Although many knitters continue to use dyed yarn made by knitting single end tubular grey fabric, dyeing, then unraveling the fabric back into yarn, the newer method of muff dyeing shortens even further the time required for processing. One obvious advantage of muff dyeing is to minimize the amount of yarn needed to maintain a continuous flow of dyed yarn to the knitter. Many throwsters now stock various deniers of grey stretch yarn in muff form, so that orders may be handled promptly. Preparation of yarn in knit tubular fabric is thus eliminated, as the muffs are dyed in package machines in the same form received from the throwster.

Other advantages claimed for muff dyeing are more level dyeing, due to dyeing under pressure rather than by immersion and mechanical manipulation of the tubular fabric; and more even appearance of fabric knitted from muff-dyed yarn (there is no mechanical crimp in the muff yarn, such as can be found in the yarn dyed in tubular fabric form).

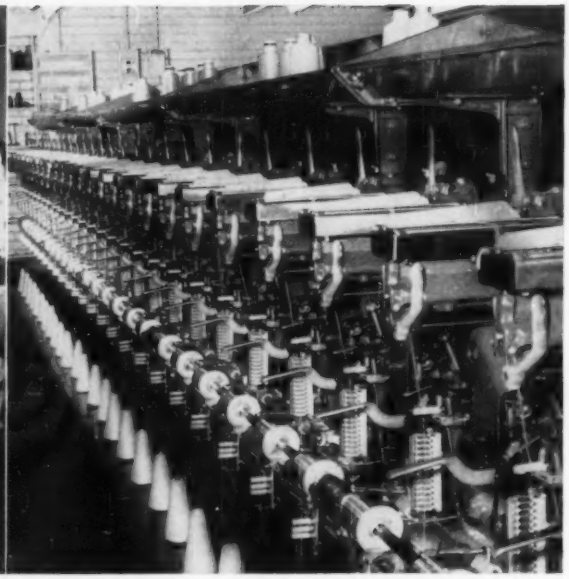
Problems in "Muff" Dyeing. The main difficulty in handling muff-dyed yarn is in rewinding from muffs to cones. In this process, there is a tendency to cause some splitting and breaking of filaments, but as a general rule there is not enough breakage to cause difficulty to the knitter, nor to reduce tensile strength of the yarn to any great extent. This advantage is usually claimed for the tubular fabric method, where the finished dyed yarn appears relatively free of broken filaments under normal processing conditions. However, use of the proper type of handling equipment and proper techniques can overcome most of the problems connected with dyeing and winding of muffs.

In the very early stages of the development of muff dyeing, there were a number of obstacles which had to be overcome both in preparation by the throwster and by the dyer. The first muffs were tediously tied with several figure-eight separation bands after reeling, at tremendous cost to the throwsters; despite this initial care, the dyers found numbers of flaws in the muffs after dyeing. There were untied ends, long loops, crossovers, and underwound sections in the muffs. These conditions made it difficult, if not impossible, to rewind the dyed muffs with any success; it sometimes required 30

MUFFS OF STRETCH NYLON loaded on package carrier ready for dyeing.



MUFFS BEING REWOUND TO CONES on Foster Model 102 winder. Wood arbors supporting muffs are rotating from pull of yarn as it winds onto cones. Arbor holds yarn in place until last yard is rewound.



CONES FROM FIRST WINDING PROCESS are rewound a second time on Foster Model 75 winders and proper finish is applied. Sensitive gate tensions with tapering attachments make uniform cones for proper knitting.

or more knots to rewind one 8-ounce muff. This was simply a case of being unable to make the proverbial silk purse out of a sow's ear; in this case a badly wound skein resulted from the attempt.

However, close cooperation between the throwster and dyer again ironed out the kinks in the new process. The throwsters began using more care in skeining, applying tension to the yarn as it was being reeled; loose ends were found tied. Improved coverings to protect the muffs were also applied by the throwsters — properly knit cotton fabric or seamless or full-fashioned hosiery strips.

The net result of these improvements benefited the throwster as well as the dyer. Better preparation and care in skeining permitted the throwster to eliminate the figure-eight separation bands, and still make a much improved muff at lower skeining cost. At present the only tying-off which is done on the muffs is to connect the inside and outside ends together by a simple loop through the core of the muff, done primarily to permit the outer end to be found easily after dyeing; sometimes a strand of colored cotton or other material, not affected by the nylon dyeing, is tied with the two ends for identification purposes and to assist in finding the outside end of the muff.

Dyeing. In the dye house, the grey yarn in muff form is handled in much the same manner as dye tubes. The muffs are loaded on spindle carriers in the same way, except that care must be exercised to expand the opening in the muffs before loading, to prevent chafing of the inside layers of yarn during loading. Since the muffs are coreless, no spacers are used between each muff. As a general rule, the number of muffs which can be loaded on a single spindle is twice the number of standard 6¾-inch dye tubes which can be loaded on the same spindle.

Standard muffs weigh between six and eight ounces; when compressed on the spindles they require a spacing of seven to eight inches between spindles to allow enough lateral expansion of the muffs.

In order to minimize matting or pilling of the muffs during dyeing, pumping pressures are kept to within a range of ten to twenty pounds per square inch during the dyeing process; standard two-way flow, as in conventional dyeing, assures even shade throughout.

Types of dyes used generally are neutral colors for medium to light shades; and after-treated and chrome colors for medium to heavy shades, to insure good fastness to preboarding, boarding, and washing of ingrain fabrics made from these yarns.

Extraction is accomplished in regular centrifugal machines, either in Smith-Drum individual package extractors, or in standard centrifuges, where several rows of muffs may be extracted at the same time.

Drying is done in standard oven-type dryers; time needed for drying is from three to six hours, at temperatures of from 140 to 180 F.

Rewinding. Although rewinding of the dyed muffs has been attempted in a number of ways, the most commonly accepted method is to unwind the yarn by unrolling it from the outer surface of the muff. Efforts to pull the yarn over the end of the muff, as in a regular rewinding operation, tend to chafe the yarn, breaking filaments, and resulting in matting or tangling.

Unrolling the yarn from the muff is usually accomplished by placing a metal or wooden expander through the core of the muff to hold the yarn in place, partic-

ularly in the inner section of the muff, so that when most of the yarn has been unrolled from the muff the small remaining portion will be supported by the expander until the final few yards are unrolled and rewound.

The wooden or metal expander is bored so that it will fit over a spindle, which can be set to rotate either in vertical or horizontal position, as desired. The use of a heavy expander on a free-turning spindle tends to minimize friction as the yarn is pulled and unrolled from the muff; at the same time the relatively heavy mass of the expander provides a certain amount of inertia in turning, so that "plucking" of the nylon in matted portions or in under-wound portions of the muff will not cause the muff to accelerate too rapidly and "run away" from the yarn being backwound. Too rapid acceleration due to plucks or trapped ends will cause backlash and consequent breakage of the end. At times it may be found desirable to place a light brake on the turning spindle by use of a piece of light cotton rope or other material around the whorl of the spindle, braking pressure being applied by a weight fastened to one end of the rope.

As to the type of winding equipment, several kinds may be used. However, it is generally better to employ slow speeds, and to use a winder in which the take-up package is driven positively, as on a Foster Model 75 or a Universal Model 50. Drum-drive winders are also used for rewinding, the advantage of the drum-drive machine being a steadier pull from the muff, but with the disadvantage of the possibility of more broken filaments from the friction drive.

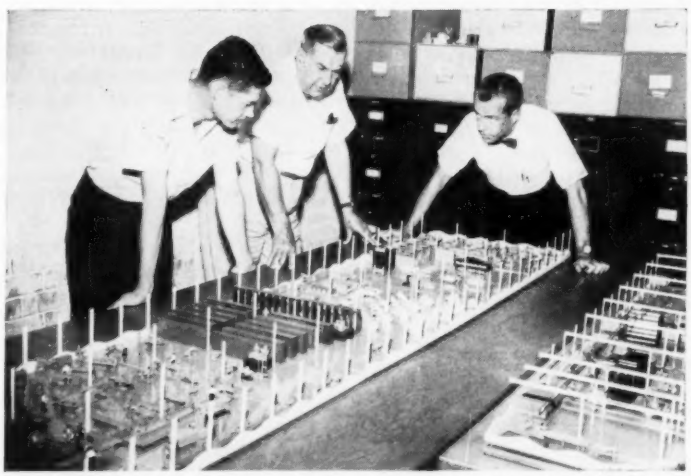
Another desirable type of rewinding is on a silk skein spooler, where the yarn is taken up on a small spool driven by friction on the spool itself. Here, if the speed is held low enough, severe plucks from the muff will not break the end, but will simply stop the take-up package. The operator can then free the trapped end, after which the take-up spool will gradually start to rotate again and resume speed after a short time. This type of winding is desirable because it minimizes the number of breaks and knots caused by trapped ends. The disadvantage is low spindle production, and slightly higher cost in rewinding from the small take-up spools.

While some converters are using only one rewinding process, directly from muffs to shipping cones, it has been our experience that there is too much variation in density of cones made in the first operation. There are also a number of cross-overs or underwinding on cones made during the first winding operation, and the yarn generally has a "shaggy" appearance on the cone, due to uneven stretching and slackening of the end as it delivers from the muff.

After the first winding operation, therefore, we rewind the yarn a second time on positive-drive machines, such as Model 75 or 50 winders, where the tension is carefully controlled by use of a sensitive gate tension, as well as by positive control on the pressure plate. Cones made in this operation are uniform in density, and every inch of the yarn is subjected to the same stress through the gate tension, so that inch-to-inch variation in stretch is minimized, thus lessening the problems encountered in knitting.

Further Improvements Ahead. A few short months ago, making stretch nylon involved a tedious and time-consuming process, in which the throwsters were required to process dyed yarn. As we predicted, improved handling techniques and close throwster-dyer cooperation have resulted in the present methods of dyeing the finished grey stretch nylon. There will continue to be further improvements in this process, which should result in even better quality and lower cost to the ultimate consumer.

Scale Models Useful In Plant Layout



MAKING PLANS for the Cocker Machine's future (left to right) are Harry Kiser of the production department, chief engineer Frank Suggs, and president John Cocker III.

STAFF PREPARED
EXCLUSIVE

AS PART of a long range expansion program, Cocker Machine and Foundry Co., Gastonia, N. C., secured a three-dimensional plant model from the Visual Planning Equipment Co., Oakmont, Pa. The models are used to arrange plant facilities for most efficient use of floor space, machines, personnel, and to make future expansion plans and changes.

The models helped save approximately 5,000 sq ft of floor space and helped over-all efficiency of operation in that all machine tools required for the next five years (although not purchased yet) have

been included in the plant layout and planned for otherwise.

The models are ¼" scale and are used on a gridded Lucite platform which serves as the floor area. A gridded sheet of plastic and templates of the model bases are supplied so blue prints can be made of various layouts.

A double-faced tape is used to fasten the models to the Lucite board, and positions of the models may be easily changed. Another use is planning the exhibit for the next textile show.

How to Spin Vicara Blends in Wool and Cotton Type Mills

BY LYMAN BILLINGS*
Director of Technical Service, Fiber Division
Virginia-Carolina Chemical Corp.

EXCLUSIVE

VICARA, the zein fiber, is being used in blends with wool and nylon on the woolen system of spinning to produce yarns for sportcoatings, flannels, suitings, and coatings, in a variety of weights.

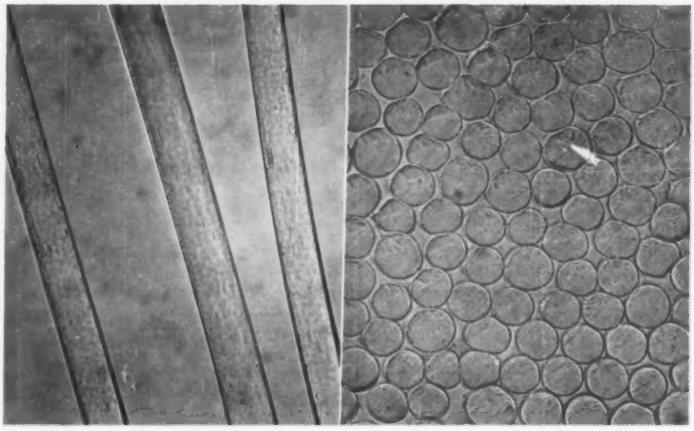
Because Vicara is made from a protein, it has properties similar to wool and other protein fibers. Chemically, it is more resistant to acids, alkalies, and heat than is wool. In moisture absorbency, elongation, and resiliency, Vicara is quite similar to wool and cashmere.

As would be expected, the tensile strength of Vicara is approximately the same as that of wool. This property, measured in grams per denier, is the same in Vicara as it is in wool *of the same fiber diameter*. This means that the actual breaking strength of a three-denier Vicara fiber is about the same as that of an 80s wool fiber.

The following table illustrates some denier/grade equivalents:

Vicara Denier	Diameter Microns	Grade Wool
2	15	Fine cashmere
3	18½	80s wool or fine camel hair
5	24	62s wool

Thus, if three-denier Vicara is blended with a 62s wool, while the tensile strength in grams per denier is the same, the actual breaking strength of each three-denier fiber will be approximately 60 per cent of the strength of each wool fiber. The wool in this case is equivalent to five denier. It is customary to select Vicara in a finer grade than the wool.



VICARA FIBER is shown here in longitudinal (left) and cross sectional view (right). Note fiber smoothness. A three-denier Vicara fiber measures 18½ microns in diameter, is equivalent in strength to an 80s wool or fine cashmere.

Spinning Vicara Blends on the Woolen System

Oiling, Picking, and Carding. Vicara is shipped with a lubricant on the fiber. This lubricant is applied during manufacture, so that it is uniformly distributed throughout the staple. Therefore, when blends are made with wool, no oil is necessary for the Vicara. In many cases, the wool part only of the blend is laid down and oiled in the usual manner, and is run through the picker. The Vicara is then blended with the wool and processing carried out as required.

For example, at Geb & Souhan Yarn Co., Seneca Falls, N. Y., a 50-50 Vicara-wool mix is a standard blend. In carding and spinning, the mill treats the mixture no differently than the comparable wool grade, but it has developed a careful procedure for oiling and picking.

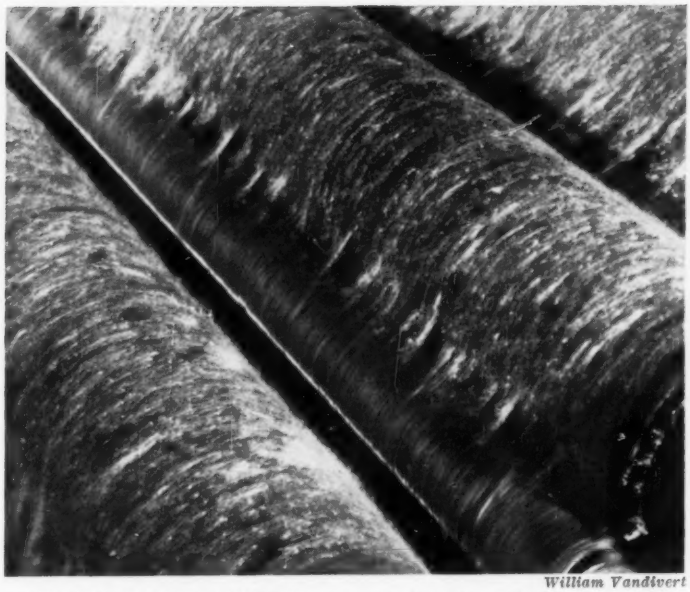
Thorough lubrication of the wool and avoidance of oil transfer to the Vicara are stressed. The wool part of the blend alone is laid down, sandwich style, behind the picker and lubricated with a one-to-five oil-water emulsion. Ten quarts of this emulsion to a hundred pounds are used.

As usual, lubrication is applied to each layer of the all-wool sandwich, which is then blended through a picker at least three times. The mix is allowed to stand for at least 24 hours for oil affixation, and then laid up, one layer alternating with a layer of Vicara. A second blending is then passed through the picker at least three times. If a Truslow blender is not used, a man is placed in the gauze

*NOTE: Because of the wide scope of application of Vicara in different blends, spinning systems, and fabrics, Mr. Billings' article covers general mill principles in certain of its sections. In order to illustrate specific application data, the editors, with the author's permission, have contacted mills running Vicara in blends and introduced some manufacturing details into the article. For more information about a particular case, consult Virginia-Carolina Chemical Corporation's Technical Service Department.

William Vandivert

ON THE WOOLEN SYSTEM, oil and pick the wool separately to keep the emulsion off the Vicara.



William Vandivert

ON THE WOOLEN SYSTEM, set cards for the wool—Vicara needs no severe mechanical action, because of its smooth surface. If wool requires too much working, card it separately.

room with a pitchfork to prevent the light fibers from going to the outside.

Carding is governed by the wool part of the blend; if the wool is easily carded, carding can be adjusted to give gentle working; if the wool requires more severe action, it may be advisable to card it alone and then recard with open settings when introducing the Vicara to the blend. This is required because of the smooth surface of the Vicara fiber. If Vicara were carded alone, one main cylinder and two sets of workers and strippers would be enough to produce a good roping.

Selection of carding details, therefore, is usually based on the minimum requirements for working the wool part of the blend, keeping in mind that breakage of the Vicara fiber should be held to a minimum.

Spinning. As indicated, spinning Vicara-wool blends is generally no different from that of the comparable wool grade. If carding is satisfactory and fiber breakage is kept to a minimum, no problems in spinning are ordinarily encountered. However, if excessive shedding or fly is seen in spinning or winding, over-carding is usually the cause and can be corrected at that process.

Spinning Vicara Blends on the Worsted System

Vicara is being blended commercially on the worsted system with Orlon, Acrilan, nylon, and wool. With the acrylic fibers and with nylon, considerable spinning has been done for use in sweater knitting (see TEXTILE INDUSTRIES for May, 1955, pp. 124-125).

With acrylics, the Pacific Converter and Turbo Stapler are being used to convert and heat stretch (or prepare for bulking), then the converted acrylic and Vicara in tow form are combined and processed in subsequent Pin Drafting, roving, and spinning. With nylon, the Vicara is usually run in a worsted card, a French comb, Pin Drafter, roving frame, and finally spun.

To illustrate processing on the short system of worsted spinning, this section will deal with the Vicara-nylon blend. Sizes up to a 50s worsted count have been commercially spun of a 50-50 blend. As a general rule, the key processing factor lies in roving and spinning: underdrafting should be avoided. Because of the behavior of the nylon, drafts shouldn't go below 10. This blend can be drafted up to 16, and there is no yield problem in the organization.

The Blend. The details cited in the manufacture of the Vicara-nylon blend apply specifically to a 50-50 blend of three-denier Vicara and type 201, three-denier nylon as processed by one New England mill. The nylon is a vari-staple type and includes 3-, 4-, and 4½-inch stock. Vari-staple is used to avoid bulking up by short fibers. In this blend, which is spun in a range that runs from 2/24s to 2/30s worsted count, the Vicara supplies softness, and the nylon, strength.

Preparation of Combed Sliver. The blend can be started either by combing the two fibers separately and blending the sliver at the spinning mill on Pin Drafters, or by blending on the worsted card, and then combing. In the mill case being described, this job was performed by the latter means, by commission top makers.

By using French combs for the Vicara in the former method, top makers have been able to reduce an initially high noilage to about four per cent. By either method, total yield is not less than 95 per cent.

Gill Reducing. At the spinning mill, the blended sliver is given three Pin Draftings. The blend is

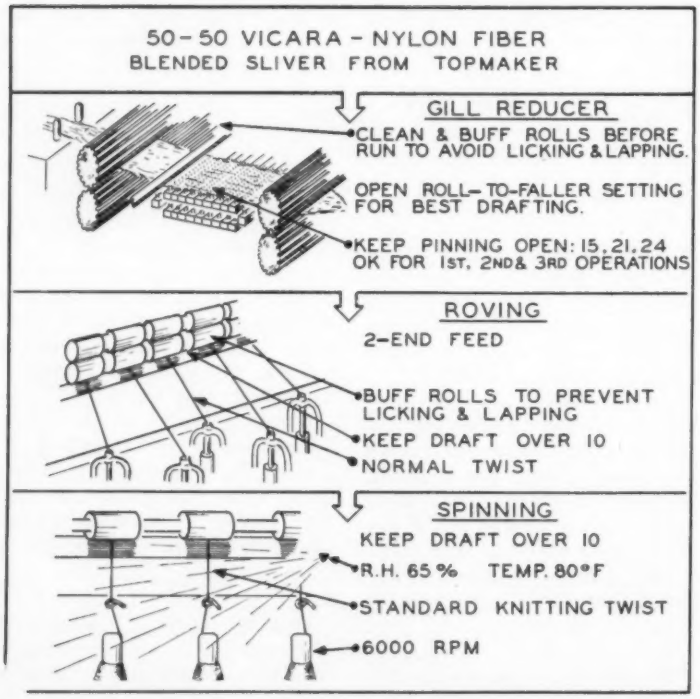
ON THE WORSTED SYSTEM, the blend can be started either by combing the two fibers separately on a French comb (left), and blending the sliver at the spinning mill on Pin Drafters (right), or by blending on the worsted card and then combing.

best run by allowing plenty of freedom, i.e., opening up the setting between rolls and fallers. This assists drafting, since the blend can be somewhat tough and tacky at this stage.

Pinning should not be too fine: number 15, 21, and 24 should be satisfactory in this example for first, second, and third operations.

As is the case when running many synthetics, rubber Pin Drafter cots can cause licking and lapping when the synthetic follows a wool run. This can be avoided by washing the rolls and giving them a light buffing.

Tips for Processing Vicara Blends on Worsted System


50-50 VICARA - NYLON FIBER
BLENDED SLIVER FROM TOPMAKER
GILL REDUCER
CLEAN & BUFF ROLLS BEFORE RUN TO AVOID LICKING & LAPPING.
OPEN ROLL-TO-FALLER SETTING FOR BEST DRAFTING.
KEEP PINNING OPEN: 15, 21, 24 OK FOR 1ST, 2ND & 3RD OPERATIONS
ROVING
2-END FEED
BUFF ROLLS TO PREVENT LICKING & LAPPING
KEEP DRAFT OVER 10
NORMAL TWIST
SPINNING
KEEP DRAFT OVER 10
R.H. 65% TEMP. 80°F
STANDARD KNITTING TWIST
6000 RPM

Roving. Experience here is with a double end feed operation and it varies little as regards twists and settings developed for wool. As noted, drafts range from 10 to 16, with the nylon setting the lower limit.

If occasional licking and lapping on front rolls does occur, buffing them will eliminate the condition. In the mill case cited here, roving tenders were given boards covered with sandpaper so that they can easily "rough-up" the rolls once in a while.

Spinning. The Vicara-nylon

blend produces a good clean spinning with no unusual problems. Spindle speed used by the mill described is 6000 rpm, and twist is standard for knitting yarn.

Spinning room conditions have been found to be optimum at 80 F and 65 per cent relative humidity.

Spinning Vicara Blends on the Cotton System

There is considerable variety in the blends containing Vicara that have been run on the cotton system. Generally, the Vicara is not run 100 per cent, although mill evaluations have been made on this basis. One common blend being run is 25 per cent Vicara, 25 per cent rayon, and 50 per cent cotton. A common type of Vicara used for blending on the cotton system is 1½-inch crimped Vicara staple.

All Vicara staple under two inches coming from the manufacturer has been opened. It could therefore be fed directly to the card, were it not necessary to form a lap.

When blending Vicara with natural fibers, the blending should not be done until the natural fibers have been opened and cleaned (after carding). When blending Vicara with other synthetics in picking, it is best either to preopen the synthetics or to work the blend only as much as is necessary to open the other synthetics (because the smoothness of the Vicara fiber requires little mechanical action to open it).

In view of the ease of opening Vicara, a general manufacturing rule is reduced speeds and open settings in picking and carding blends containing this fiber. The following suggests the more critical speeds and settings for yarn manufacture, with suggestions for correcting any slight processing difficulties which might occur. As is usually the case, these suggestions are subject to modification to suit the conditions and requirements of a particular mill.

Picking. Vicara staple should be processed through picking and carding under minimum conditions of 75 F and 65 per cent rh. A one-process, two-beater synthetic picker with Kirschner-type beaters is suggested.

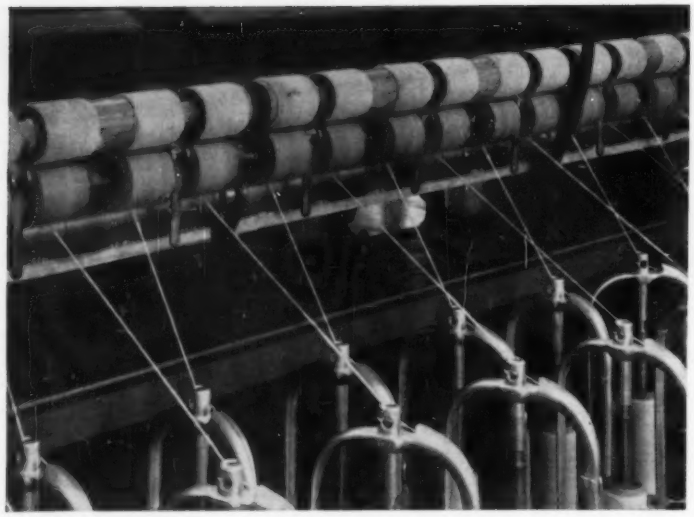
Beater speeds should be kept low to minimize fiber breakage and neps. Speeds of 600 to 700 rpm have been used with good results. Beater-to-feed-roll settings of at least ⅜ inch are recommended, and fan speeds should fall in the 1100 to 1400 rpm range to assure proper distribution of the stock on the screens. If fan speeds are too low, the lap may split when unwound on the card. Another precaution against lap splitting is use of top and bottom lap markers.

Other picker conditions advised include: an increase of compressive action of calender rolls and decreased pressure on lap pin; running four or five ends of Vicara roving into the picker laps as they are being formed and channeling air currents to top screen to minimize lap splitting in carding; shimming up lap heads if the lap sags; and setting stripping plate to beaters 1/16 inch.

Laps of 12 to 16 ounces per yard and 23 to 25 pounds total weight have given best carding results. If lap pins are difficult to remove, use of a tapered lap pin or cardboard tubes over the pin will cor-

For Blends With Cotton, Vicara Is Picked and Carded Separately
Here Is How Two Mills Did the Preblending Job

Picking	**Mill A**	**Mill B**
Fiber	1 9/16" Vicara	2" Vicara
Stock fed to picker by	Blending feeder	Blending feeder and condenser
Picker used	Saco-Lowell one-process	Saco-Lowell one-process
Type beater	Two Kirschners	Two Kirschners
Beater speeds	612 rpm	Front—960 rpm Back—700 rpm
Beater-to-feed-roll setting	3/8"	1/4"
Fan speed	1457 rpm 1115 rpm 1110 rpm	Front—1350 rpm Back—1350 rpm
Blows per inch	23.5 9.61 9.38	——
Lap size	12 oz	16 oz
Remarks	Shimmed up lap heads so lap wouldn't sag. Ran without water.	
Carding		
Type card	Flat top	Flat top
Licker-in to cylinder	0.007"	0.007"
Licker-in diameter	9"	9"
Feed plate to licker-in	0.012"	0.022"
Flats to cylinder	0.010"	0.010"
Cylinder diameter	50"	50"
Back knife plate to cylinder	Top—0.012" Bottom—0.007"	Top—0.022" Bottom—0.017"
Front knife plate to cylinder	Top—0.029" Bottom—0.029"	Top—0.022" Bottom—0.017"
Cylinder wire	110s	90s
Flat wire	120s	110s
Doffer wire	120s	100s
Doffer diameter	27"	27"
Doffer speed	3.5 rpm	8 rpm
Doffer to cylinder	0.007"	0.007"
Doffer comb to doffer	0.017"	0.022"
Feed	12-oz lap	16-oz lap
Delivery	46-gr sliver	60-gr sliver
Pressurized calender rolls	Yes	Yes
Flat speed	1"/min	1½"/min



FIBER FREEDOM IN ROVING is advised for Vicara blends on the cotton system. To do this, front-to-second-roll settings of staple plus ¼ inch, and second-to-third-roll settings of staple plus ⅜ inch are suggested.

rect the condition.

Carding. In carding on regular revolving flat cards, conventional settings and speeds employed for rayon are recommended with some exceptions:

Licker-in speed—about 200 rpm (boost if loading occurs).

Feed plate to licker-in—0.022 inches.

Flats to cylinder—0.015 inches.

Closer percentage plate settings.

Eliminate fancy roll.

No static bar should be necessary on the card if conditions of atmospheric moisture are adequate. Care should be taken to prevent humidifier air currents being directed onto and thus disturbing the card web.

With self-weighted calender rolls, the Vicara sliver may tend to be open and fluffy. Pressurized calender rolls, however, will sufficiently compress the sliver so that it will pull its own weight in subsequent drawing operations.

If the web sags, the doffer comb should be raised and calender rolls speeded up; if the sliver sags between coiler rolls and calender rolls, a larger trumpet size at the coiler rolls will reduce this condition.

If roller top cards are used, about the same settings and speeds as used for flat cards should be satisfactory except for workers and strippers. Three workers and three strippers set at 26 gauge should card Vicara staple satisfactorily.

Drawing. This operation does not generally require special attention when processing Vicara blends. Both metallic and synthetic rolls have been successfully used with the following approximate settings:

Front to second roll—staple plus ⅛ inch.

Second to third roll—staple plus ¼ inch.

Third to fourth roll—staple plus ½ inch.

Six doublings and a draft of six is common. Relative humidity of 65 per cent at 75 F is satisfactory.

Roving. In the roving operation, drafts and roll settings depend on whether or not conventional or high draft frames are used, along with the hank roving fed and final counts desired. Where adjustable, settings advised are:

Front to second roll—staple plus ¼ inch.

Second to third roll—staple plus ⅜ inch.

The object is to give the fiber as much freedom as possible and still retain control of it.

Other conditions recommended are: top rolls synthetic, bottom rolls fluted; spindle speed range from 900 to 1100 rpm; and twist multiplier, 0.95.

Spinning. Details of settings, speeds, twist for spinning frames are more variable for spinning Vicara blends than are the details of the equipment described thus far. Outside of keeping rolls as open as the quality of the work permits, no generalizations can be made here.

Have You Tapped This Source of Performance Data on Your Fabrics?

BY HARRY COHEN*
Industrial Detergents Division
Lever Bros. Co.

MANY technologists assume themselves to be experts in judging the performance, characteristics, and serviceability of textiles. While to some extent their opinions may be justified, I feel we must always bear in mind that the end test is the serviceability of the fabric in actual performance. . . .

Now how do we obtain experience beyond ourselves in order to know how our products perform? Shall we use complaints? Remember that complaints reported back from the consumer level are reliable only when the complaint resulted in an untimely loss of value to the consumer and a strong complaint was registered to the manufacturer. Complaints that cause dissatisfaction and are never reported merely "second grade" the product. This can prove a very insidious effect upon a market, even more so than the former.

One way of obtaining this experience that strikes me as most

*From paper presented before the American Association of Textile Technology, Inc., meeting of September 7, 1955.

logical is the examination of thousands of garments which are actually in the various stages of wear.

Both the American Institute of Laundering and the National Institute of Drycleaning are noted for their fine research programs, and both are willing to hold out a helping hand to textile interests in dealing with common problems of textile performance. They encourage such cooperation. You should take advantage of it as have thousands of member plants throughout the country.

Let me give you some examples of problems in the laundry industry. As technologists, are you aware of the difference between a Y-pocket machine and a Pullman type, or an open pocket? Is there a difference in the pounding, friction, or rise-and-fall in each of these machines? Therefore, does one machine wash better than another? If so, why? Is there a greater tensile strength loss in one machine over another? Is there a greater whiteness reflectancy apparent? Is there a different felting or shrinkage?

Or let us approach it from the dry cleaning angle. As technologists, are you familiar with the 4% charge system? Is your product sensitive to trichlorethylene? Perchlorethylene? Carbon tetrachloride? Petroleum solvents? Have you tested each solvent reaction, or just one of the group? What is the maximum pressing temperature for your finish?

Now you will surely ask me, "Does this mean that the standards I have been using to date are insufficient and incapable of giving a fair indication of serviceability?" My answer is decidedly—*no.* Continue to use all of your present standards, but also advance a step and take advantage of the vast experience of many thousands of member plants, reporting their problems daily and sending damaged garments for test to ascertain cause of fabric and finish failure. . . .

In conclusion, let me point out the importance of a common meeting ground between the textile, laundry, and dry cleaning industries. It seems to me that such a meeting ground is an absolute necessity if we are to succeed in our consumer markets.

15-Year Mill Margin for Six Cotton Print Cloths

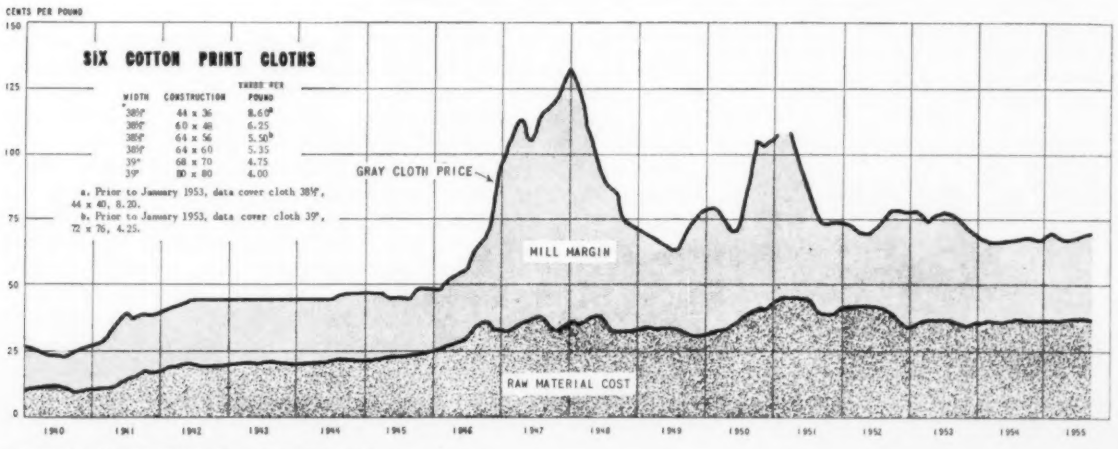
DURING the first nine months of 1955 the average mill margin for six cotton print cloth constructions was 31.40 cents per pound as compared to 30.76 cents per pound for the same period in 1954, according to an analysis presented in the November, 1955, issue of "Textile Organon," statistical bulletin of the Textile Economics Bureau, Inc.

It was explained that this widening resulted when the average price received for finished cloth increased by 1.19 cents a pound over the 1954 period, while the average price of raw cotton rose only 0.55 cents per pound.

From data furnished by the Production and Marketing Administration of the United States Department of Agriculture, the Bureau prepared the chart reproduced here which shows for the 15-year period 1940-1955 the raw material cost, grey cloth price, and the resultant mill margin for the average of the six cotton print cloth constructions described in the upper left portion of the chart.

Raw material price was based on raw cotton prices at the 14 designated spot markets for the various qualities of cotton assumed to be used in each type of cloth described, and allowances were made for salable waste. Thus the mill margin represents the cost of spinning the yarn and weaving the cloth, as well as any mill profit.

The September, 1955, mill margin of 33.29 cents per pound was the highest since November of 1953, the "Textile Organon" reported.



The Formation of Wool-Like Fabric Structures

STAFF REPORT*

WOOL, because of its ability to give stable, low-density fabric structures, is valued for its warmth, resilience, and water-repellency. To date, scientists have attempted to explain these properties by studying individual fiber characteristics; little has been learned, however, about the actual behavior of wool fiber assemblies in the conversion of wool into useful materials. Such information is essential to defining wool-like fabric structures, establishing the mechanisms most responsible for the behavior of the wool fiber, and developing new, desirable fabrics from a variety of fibers.

Certain properties of the wool fiber can be considered useful or not, depending on fabric use. For example, high shrinkage, felting, and inter-yarn tangling can have a choking effect in such areas as laundering; the same properties can be responsible for the production of stable, wrinkle-resistant, low-density fabrics in the fulling operation. This must be considered in relating a study of fiber properties to end-use results.

This study concerns the development of a general picture of fiber properties in woolen system manufacturing. This system was selected because wool fibers can "assert themselves" to a greater degree in it.

Fulling. In the woolen system, fulling is probably the most important step: wool fabrics are not made in the loom as they are in other fiber systems, but rather in finishing. Shrinkage and felting is an art dependent on variables which are usually discovered by trial and error. Through varying dampening, pounding, compression, and relaxation cycles the fuller can develop different types of finished fabrics. If the fabric is "brought in" fast, a thick, soft, and fuzzy fabric will result; the same fabric can also be finished thinner, firmer, with a denser nap.

Measuring Changes. A 16-ounce melton was studied as it progressed from the off-loom state through fulling, shearing, and sponging.

In studying yarn crimp, the degree of crimp retention was considered dependent on how well it was stabilized by entanglement and felting-in with fibers from adjoining yarns. It was learned that crimp can be improved momentarily but does not have permanence after it comes out of the fulling mill.

Wool fabrics differ in their degree of crimp retention. "Pull-out" of crimp depends on the blend used. Fulling is responsible for some "pull out," and this must be compensated for. Shearing is most influential in causing loss of crimp.

Texture, considered the sum of the warp and filling yarns per square inch, is increased with increases in the degree of fulling.

Yarn twist per inch increases 25 to 27 per cent in fulling; then, like crimp, it tends to be lost in shearing.

Weight per unit area of the fabric increases substantially in fulling, and is associated with increases in texture. Weight increases are also effected in increased twist and crimp.

Fabric thickness increases with increase of yarn diameter in two ways: (1) in relation to the contraction of yarns maintaining same fiber density, and (2) when the percentage of fiber per unit volume is changed.

Thickness decreases with increase in crimp balance and also decreases with increases in yarn flattening. Crimp tends to be unbalanced in the loom (straight filling, bending warp); in this state, fabric thickness is about three times the diameter of the yarn. After fulling, thickness is about two times yarn thickness. If imposed fulling crimp is retained, the crimp balance of the fabric is improved.

Weight and thickness are about the same in fulling (as regards percentage increase over loom state). After that, in shearing, etc., weight tends to remain constant and thickness goes down, particularly

*This report is based on a paper authored by Jack J. Press of the U. S. Navy Clothing Supply Office and The Polymer Research Institute and presented at a Conference on "The Stabilization Of Textiles," sponsored by the Institute of Polymer Research at The Polytechnic Institute of Brooklyn on November 19, 1955.

Mr. Press' studies were made during various stages of manufacture of woolen, worsted, and synthetic clothing fabrics. From them, a series of simple yardsticks have been developed for use in measuring yarn and fabric changes. These measurements, plus microscopic studies, are now being used to develop a preliminary unified picture of progressive fiber, yarn, and fabric changes during fabric manufacture. The results appear to be promising in their potential for use as guides in engineering wool-like fabric structures.

A Multi-Story Mill

STAFF PREPARED

EXCLUSIVE

THESE PHOTOS illustrate the operation of a conveyor system recently installed for automatic transportation of bobbin boxes from the spinning room on one floor of the mill to the spooler room on another floor, and return of the empty boxes to the spinning room.

1. Bobbin box is loaded onto elevator in spinning room.

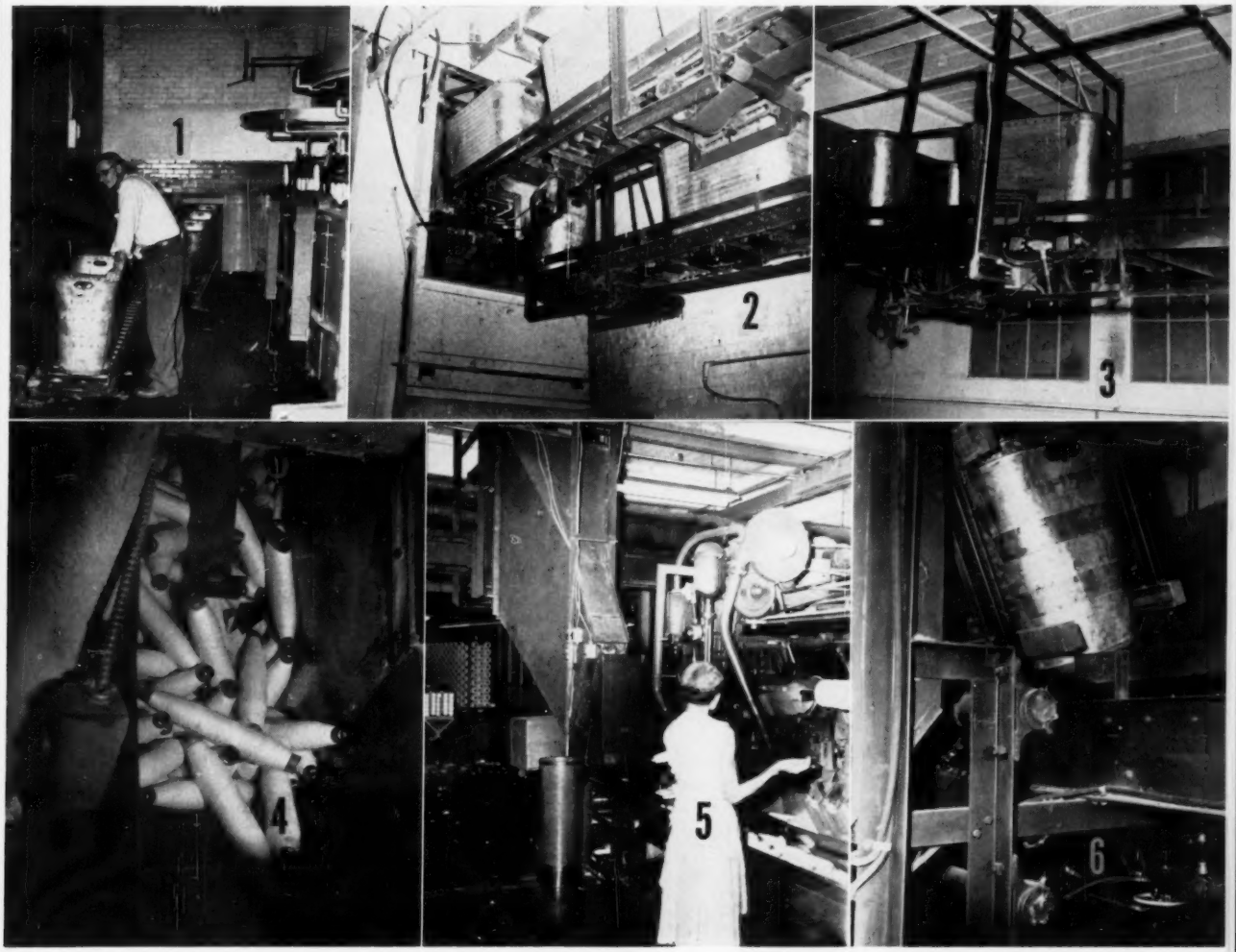
2. Full box (near conveyor) arrives at floor where spooler is located. Empty box (far conveyor) goes into elevator for return to spinning room.

3. Full boxes wait at stop in spooler room until feeler **(4)** in hopper **(5)** at end of spooler signals that supply of bobbins is low.

6. Box travels down conveyor to hopper, hits stop, and is automatically lifted and dumped into hopper. Empty box is then shunted to return conveyor. There are three spoolers in the line; full box continues down conveyor until it arrives at hopper where stop has been raised into its path by feeler detecting low bobbin supply in hopper.

Installation was made by Logan Co. at Huntsville Manufacturing Co., Huntsville, Ala.

Cut Handling Costs With Automatic Yarn Supply to Spoolers



if pressing is involved.

Yarn and Fabric Weight Factors. In observing the weight changes in both yarn and fabric from the off-loom to fulled state, figures for the two sets of data were in good agreement. Considering yarn weight change to include the sum of crimp, twist per inch, and texture change, the total in the 16-ounce melton was about 74 per cent. Considering fabric weight change to include the sum of weight per unit area change and an approximate manufacturing loss, the total for the same fabric was 78 per cent.

This effect, measured from off-loom state to fulled state before deformation by subsequent operations, is a most important area; figures cited here are most significant in that they show a great change.

Blends. The relationship of increases in thickness, crimp, and yarn twist from the off-loom state were observed for two types of wool-synthetic blends (see box on next page).

Generally, fulled fabrics give increases in yarn twist, fabric thickness, cover, and fiber entanglement. In scouring, there is no felting and little fuzz development.

Microscopic Examination. In magnifying grey woolen yarns, inter-fiber entanglement and fiber curling are observed but are comparatively small. Fiber curling becomes apparent after fulling, as does an increase in loose fiber and coils.

Also, in the grey, the yarn ap-

Fabric	State	Thickness %	Crimp %	Twist %
15% synthetic	fulled and scoured	12*	30	18.5
30% synthetic	fulled and scoured	10	15	15.5
15% synthetic	scoured only	0	22	5.5
30% synthetic	scoured only	-10	17.5	3

*reflects greater crimp balance and less pull-out

pears to be thinner and cleaner, while yarn from a fulled fabric is thicker, fuzzier, and more disordered.

Significance. The tendency for wool fibers to entangle causes fiber breakage in early stages of processing (up to 50 per cent in carding alone), and is accompanied by difficulty in processing. If we can learn how to avoid entanglement, considerable progress will have been made.

As a result of this breakage, grey yarns already contain a fair degree of projecting fibers. If woolen yarns could not be woven in loose textures and then finished, it would be impossible to get fabric density with them in weaving alone.

The appearance of increased curliness and coiling in yarns from fulled fabrics does not represent the whole picture. These irregularities may be cut off in shearing and flattened down in pressing.

Summary. In processing loose fiber assemblies, several things occur simultaneously:

1. Twisting and coiling of individual fibers,

2. Entanglement of adjoining fibers,

3. Continued migration of entangled fibers with relation to one another—this may or may not be due to directional friction effect.

From the fabric standpoint, it might be possible to improve the processing of woolens to develop more stable fabrics. This is possible through better understanding of properties of wool and wool-blends.

More "wool-like" properties can be developed by a better understanding of fiber geometry and yarn and fabric properties.

Cotton Fiber Strength Testers Evaluated

A STUDY to evaluate available types of cotton fiber strength testers and to ascertain the comparative significance of test results obtained by means of these instruments from the standpoint of relation to yarn strength was recently completed by USDA cotton technologists, and a report of their findings has been published.* Summary and conclusions presented are quoted below:

"A comparative evaluation of the Pressley, Clemson, and Stelometer cotton fiber strength testing machines shows that the three machines are measuring essentially the same fiber property. The results of tests made on each of the three machines using 3 mm gauge spacings were comparable—that is, one machine was not proven to be superior to another in explaining variation in, or predicting yarn strength. The results obtained on the three machines, however, are on different levels of strength values.

"It was found that strength test results of maximum significance could be obtained at slightly more than 3 mm, hence ⅛" (3.2 mm) gauge spacing was adopted as standard by the Standards and Testing Branch of the Cotton Division, U. S. Department of Agriculture.

"Test results obtained from the Pressley and Stelometer testers are slightly more precise than those obtained from the Clemson tester. This is attributed to the fact that more exact readings may be made from the direct reading scale of the Pressley and Stelometer testers than from the chart used with the Clemson tester. The Clemson tester is slightly faster to operate than either the Pressley or the Stelometer. The Stelometer clamp loading technique requires slightly more time than the Pressley clamp loading technique.

"In the preliminary work it was found that bundle widths from ⅛" to ¼" gave essentially the same results when the 3 mm gauge spacing was used. Continued use of the narrow bundle widths, however, was found to damage the leathers of the clamps, hence the ¼" bundle width has been adopted as standard procedure for testing by laboratories of the Cotton Division of the Agricultural Marketing Service.

"A torque within the range of 10 to 18 inch-pounds when the 3 mm gauge spacer was used, gave comparable results.

"Fiber length seems to have little, if any, effect on optimum gauge spacing within the range of 0 to 4 mm.

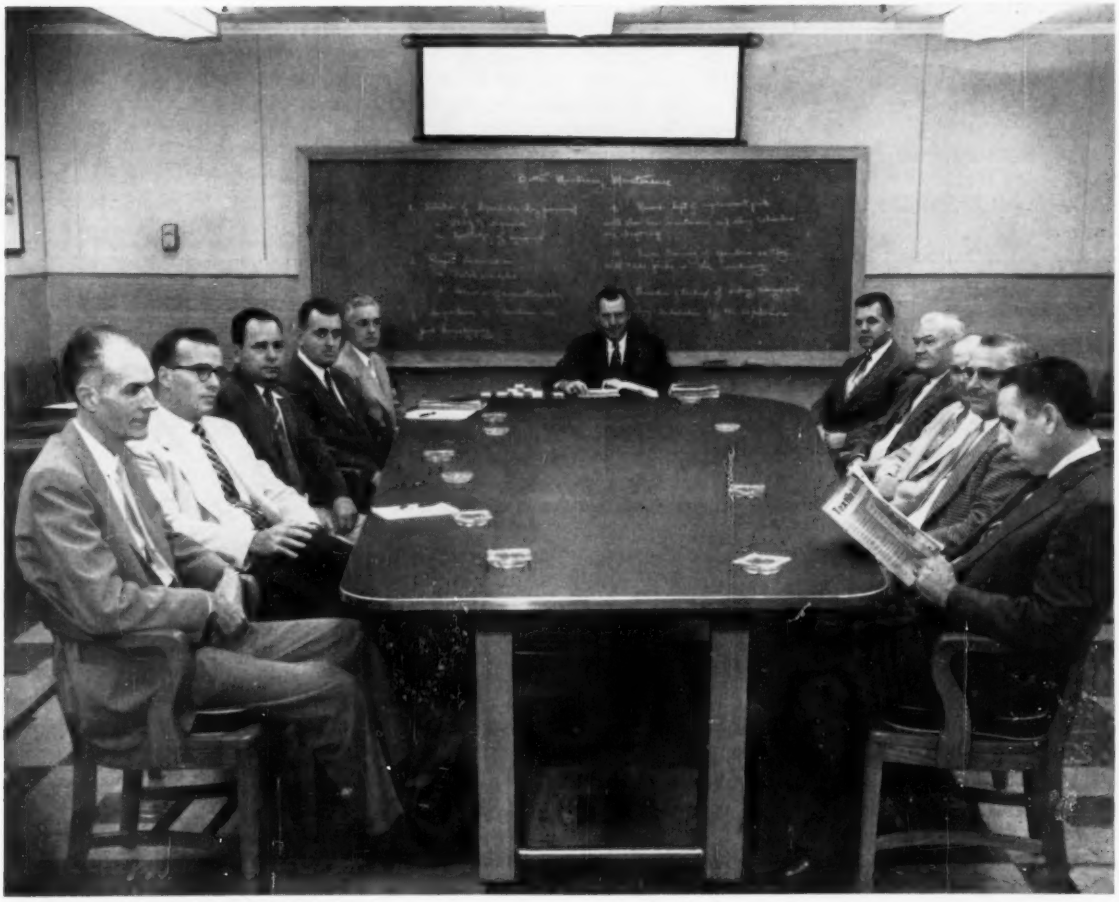
"The results obtained from the Stelometer tester by either the Pressley or Stelometer clamp loading technique give essentially the same coefficient of correlation when such results are used in multiple correlation analyses with the dependent variable being the strength of 22s carded yarn and the independent variables being upper half mean length, fiber

*AMS-71 "The Evaluation of Results Obtained on Available Types of Fiber Strength Testers Using Various Gauge Spacings and their Relation to Yarn Strength," by Samuel T. Burley, Jr., and Frances Carpenter. Published by United States Department of Agriculture, Agricultural Marketing Service.

tensile strength, fineness and maturity by the Causticaire method. When the results obtained by these two clamp loading techniques are used in simple correlation analyses with 22s carded yarn strength, the coefficient of correlation for the Stelometer technique is slightly higher than that for the Pressley, although the difference is statistically insignificant.

"Results of tests made on 323 commercial cotton samples using the ⅛" gauge spacing explain much more of the variation in strength of 22s yarn than the results for the same samples using the 'O' gauge spacing."

Staff Meetings Benefit Firestone Textiles



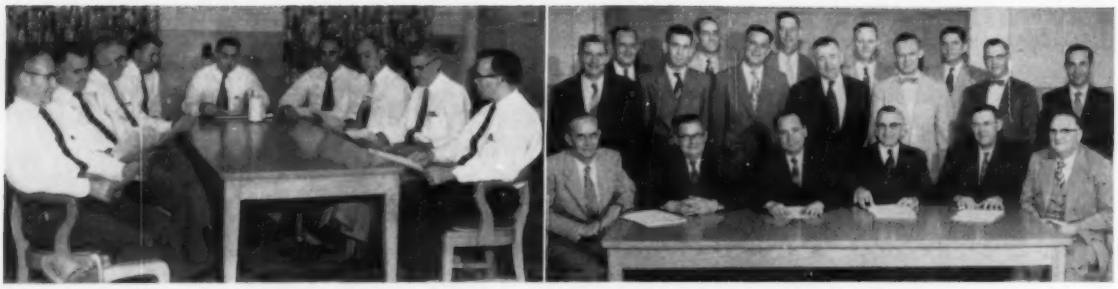
TOP LEVEL SUPERVISORS meet in plant conference room. General Manager Harold Mercer presides at this meeting. Note TEXTILE INDUSTRIES being used as basis for discussion on "Better Maintenance" at this session.

STAFF PREPARED
EXCLUSIVE

MANAGEMENT officials at Firestone Textiles, Gastonia, N. C., believe in conferences as an aid to good plant operation. A comfortable, well equipped conference room is considered essential and is provided at this mill.

Who Attends? All top level supervisors attend the meetings. The group at Firestone includes the general manager; general superintendent and assistant superintendent of the synthetics division; superintendent and assistant superintendent of the cotton division; comptroller; manager, raw cotton department and warehouse; chief engineer; head of the industrial relations department; head of quality control department; chief electrical engineer, head of cotton yarn and fabric sales.

Why Meet? The purpose of general staff meetings at this plant is to keep top management informed and to get the benefit of all top level supervisors' opinions in arriving at decisions or making recommendations. The theory is that twelve heads are better than



CONFERENCES ARE HELD by Cotton Division supervisors (left) when occasion demands. F. B. Galligan, superintendent, heads these meetings. Synthetics Division supervisors (right) also meet separately on certain occasions as the need arises.

one. Also, top level supervisors are kept well informed through these meetings.

The meetings help to make supervisors feel that they are part of the organization and to be sure they realize it.

The plant manager keeps files during the week on everything that should be discussed at the meetings. The assistant to the man in charge of each department is well briefed on matters to be discussed in case the department head is out. In some instances several men may be excused from meeting if the discussion is not related to their duties in any way.

When? Meetings are held every Tuesday (with exceptions) and require about two hours of time. The sessions are called "staff meetings" or "product meetings," depending upon the agenda.

Where? Meetings are held in the plant conference room provided for this purpose. The room is air-conditioned, comfortable, and relaxing. All facilities are provided for demonstration: motion picture projector, slide projector, blackboard, etc. This room also serves as the induction room for new employees every Monday.

How? Oftentimes, leading questions are asked to start discussions. In one regularly scheduled staff meeting, better maintenance was discussed. TEXTILE INDUSTRIES' August, 1955, issue was used as the basis for the discussion, and the following outline appeared on the blackboard to guide the discussion:

(1) Selection of dependable key personnel.
  (a) Ability to supervise.
  (b) Knowledge of equipment.
(2) Proper lubrication.
  (a) Posted schedules.
  (b) Selection of conscientious oiler.
(3) Importance of cleanliness and good housekeeping.
(4) Records kept of replacement parts will show how maintenance and oiling schedules are kept up.
(5) Proper training of operatives so they will take pride in machinery.
(6) Periodic checkup of oiling, scouring, and overhauling schedules by the supervisors.

TEXTILE INDUSTRIES is often used as a basis for production, management, and new product discussions, according to a spokesman for the mill.

Accomplishments. Minutes of each meeting are kept which are checked to follow through. Follow-up files are kept, in some instances for as long as six months.

Dynamic balancing of spindles and moving parts was a program adopted during a meeting, and was one long-range program that is paying off now. In this instance, the mill has its own equipment and department set up to do the job. This department is controlled by the chief electrical engineer, because it is an electronic process. Balanced parts improved quality by giving more uniform work. The balancing department is located adjacent to receiving department.

Use of nylon travelers started as a result of discussion in these meetings, and attendant advantages were realized. The meetings help overcome natural resistance to change.

Synthetic tapes were adopted. These spinning and twisting tapes are said to have longer life, lower power consumption, more uniformity, and permit less spindle slippage. Many similar items are talked about in the meetings.

Other Meetings. Other groups of lower-level supervision also meet to discuss technical problems. Supervisors from all departments attend, thereby permitting each division to benefit from the experience and problems of the other. For example, the cotton division hears the problems and experiences of the synthetics division.

Warehouse personnel meet once each month, and supervisors discuss warehouse conditions and ways to improve them.

A supervisors' dinner meeting is held once each month during the winter.

A group meets on plant safety once a month on regular schedule. This meeting is attended by all supervisors above section man rank. The director of safety presides.

A suggestion meeting is held once each month to discuss employee suggestions. The head of the industrial relations department presides.

Community programs are covered in stride during the course of these meetings and without upsetting normal operations. For example, the United Fund Appeal chairman is a Firestone official who covers the project during one of the supervisors' meetings. Harold Mercer, general manager of the plant, is president of the Greater Gastonia United Fund and Council.

The Designing Department Does More Than Design

The author briefly outlines some of the work performed by the designing department and offers suggestions for ways by which the technical and sales-promotion knowledge possessed by textile designers may be more fully utilized by the mill.

BY OSBERT HUGHES
Dan River Mills, Inc.

EXCLUSIVE

THE FUNCTIONS of the designing department in the average textile mill can be as many and as varied as are the widely varying products of our textile industry. Certain functions, responsibilities, and duties are common to all designing departments, whether the organization is large or small, or what types of textiles are manufactured.

The Primary Function of the designing department is, of course, the origination and execution of the designs for the styles and fabrics to be woven by the mill. This can vary from the mere laying-out and cost-figuring of basic constructions woven by plain fabric mills, through the more complicated drafting of patterns for fancy dobby work, to the complex weaves and elaborate warp and filling decorations used by Jacquard mills which weave bedspreads, upholstery, and similar fabrics.

Knowledge of Machinery. A competent designer will have knowledge of weaving and the mechanisms used by his mill in producing patterns, e.g., dobbies or Jacquards. Coupled with this should be a working knowledge of yarn spinning and twisting, warp preparation and dyeing, and the finishing techniques employed.

All of these factors enter into the successful styling and designing of the product.

A large mill will likely maintain a staff of specialists in some phase of design who will cooperate together, but handle all the various activities separately. On the other hand, a small mill will likely have only one or two designers who, with some clerical assistance, will do all the styling and designing, fabric analysis, cost estimates, warp layouts, production control, and probably cooperate with the sales department in dealing with special customers to develop exclusive fabrics and designs for them.

The various activities of most designing departments may be summarized as follows:

Styling — the Creation of New Designs. The task of styling new designs for the mill's products may be entirely the responsibility of the head designer, but often this is delegated to another individual, known as a stylist.

Usually a new line is best developed through frequent consultation between the stylist and the designers, the sales force, and mill management.

It is axiomatic that the sales department must sell what the mill can make, but the mill must also make what the sales department can sell. Close cooperation between the various departments is essential to produce fabrics and designs that meet these requirements.

Stylist Is Advance Scout. It is the stylist's responsibility to continually uncover and develop new sources of ideas in new fabrics and designs. He will act as a sort of intelligence agent, scouting the fashion centers, following the trends of color, design, textures, etc., and forecasting for the designers and the sales force what the future requirements of the customers will be.

Sources of Style Ideas. Sources of new ideas for the stylist are many and varied. They include the vast reservoir of antique and foreign samples that, while privately owned, are usually available for a nominal fee. Such fabric samples, through adaptation and modification, often appear in new forms quite unrecognizable from the original.

Museums and art galleries are always dependable sources of ideas, especially for conventional and traditional designs. Although an original idea for a new design or fabric may come as an inspiration, the development and proper exploitation of it will require a good deal of hard work and full consultation between the stylist, designers, and sales manager.

The offerings of free-lance artists and designers can often be used to good advantage. These will add originality and variety to any line, and often they are sources of suggestions and ideas that would not otherwise be obtained. By judiciously mixing sources of new ideas a stylist can develop a varied line that will have sales appeal for any customer. This is particularly necessary for the decorative fabric lines. For the simpler and more staple fabrics the stylist may not need to look so far afield.

Designing for Plain Fabrics. Plain fabrics are usually made on standard constructions; their designing often entails a study of end-use so that the correct yarns and fabric construction (ends and picks) are used to obtain a required weight in ounces per square yard.

Many industrial fabrics and most government work fall into this category. Such fabrics are usually made to meet rigid specifications, and the designer must not only be fully conversant with these specifications, but also know the capabilities and limitations of his mill's equipment so that bids and contracts when made will be both practical and profitable.

The actual designing of plain fabrics usually involves only a listing of total warp ends, picks per inch, yarn counts, reed and reed spread, and type of selvages. In some cases a reeding plan may be required, especially when there is a warp pattern calling for certain

reed dents to be drawn differently from others. Drawing-in and chain drafts are not generally required for plain fabrics.

Some mills specify that their fabrics carry selvage markers for identification purposes. If these markers are to be permanent they can be of one or two ends of dyed yarn, different in color from that of the remainder of the selvage. Fugitive tints may be used if the markers are only for mill use and are not to be retained after finishing.

There are times when an invisible marker is required, when for some reason a certain lot is to be kept separate. In this case one end of yarn different from rest of the selvage, although the same in color, should be used. This end may be of opposite twist; or possibly an end of three-ply yarn may be used if the selvage is made with two-ply yarn. This special end can be easily identified with a pick glass and will always serve as a private and permanent marker.

Designing for Fancy and Dobby Fabrics. These types of fabrics call for more manufacturing details than do plain fabrics. In addition to the warp and filling layouts, drawing-in drafts, box chain drafts, and dobby chain drafts will be required. There are two ways of making warp and filling layouts in general use. One form is as shown below:

WARP

44 ends	Dark Gray	X 26 times
22 "	Blue	
10 "	Light Gray	
26 "	Pink	
10 "	Light Gray	
22 "	Blue	
26 "	Dark Gray	
16 "	Dark Gray	

4176 total ends, selvages extra.

Filling

52 picks	Dark Gray
16 "	Blue
8 "	Light Gray
20 "	Pink
8 "	Light Gray
16 "	Blue

A more modern method that is finding increasing favor with the mills is to use a fabric construction sheet similar to that shown in the accompanying illustration. This form of construction sheet carries much manufacturing information in a handy and compact manner. Sufficient copies should be made so that all interested parties can be given a copy.

It will be found a most useful practice to paste a small swatch of the style, in all patterns made, on the back of the designing department's file copy of this construction sheet. This will provide a permanent record of every style and pattern made by the mill.

Sufficient copies of the drawing-in draft, box chain, and dobby chain drafts should be prepared for mill use; it is also important that a master copy always be retained in the designing department files. When many copies are required, some type of multigraphing or photo-copying device will prove invaluable in saving time and labor in duplicating these drafts and in avoiding errors when copying them by hand.

Cost Estimates. Designing departments may also have the responsibility of figuring the standard or estimated cost of each new style and fabric. A standard form to suit the mill's particular needs should be devised. This form will list the construction details of the fabric, the colors required, and any other pertinent information as required by the mill management.

In small mills the designer will likely complete the form, including labor and fixed or overhead charges, sales expense, etc., and establish the selling price of the style. When a separate cost department is maintained the form will likely list only the construction and manufacturing details; it will then be turned over to the cost department for completion.

Designing for Jacquard Fabrics. Jacquard fabrics will usually require a construction sheet which contains the same detailed information as to warp and filling layouts, picks per inch, reed, etc., as outlined for fancy and dobby fabrics. In addition, the painting of the Jacquard design, making out the card-cutting instructions, the actual cutting of the Jacquard cards, lacing the cards for the loom, and repeating duplicate sets of cards will be the responsibility of the designer.

The harness ties used on the Jacquard looms will generally be the responsibility of the designing department. This will involve planning the tie to suit the Jacquard and the fabrics to be made, the specifications for the comber-board, properly laying out the draw for the harness in the comber-board, and other necessary details.

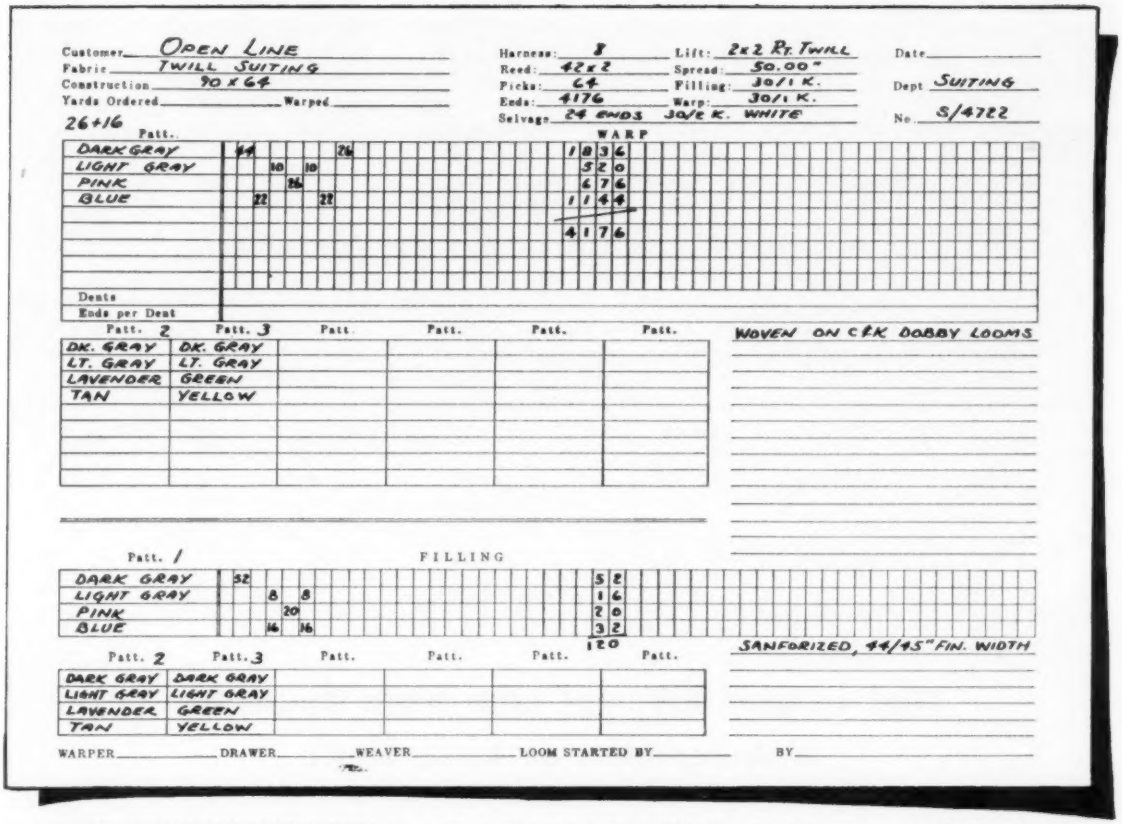
Due to the considerable expense of tying-up a Jacquard, these ties are not usually changed when once installed, but are run until worn out. In view of this, care should be taken to select the most versatile ties possible to suit both the present and probable future needs of the mill.

Once a loom is tied up, variations of constructions can be made by "casting-out" in the Jacquard. The designer will plan these castouts; to do so he should maintain proper records in his department of the hooks or rows cast out, as well as a specimen castout card.

The selection or preparation of the original sketches from which the designs will be made will likely be the joint duty of the stylist, designer, and sales manager. The stylist will likely be responsible for the selection of colors to be used. The designer will actually make the designs from the selected sketches and have the cards correctly cut.

Samples. The majority of mills make most sales from samples. Although sketches and other suggestions are sometimes adaptable for special order work, customers generally prefer to see what they are buying—and to this end proper selling samples are usually prepared. Also for fancy fabrics, when a new line is being prepared, samples in varying constructions and in many color combinations are often made, these samples being considered at a style conference and the best selected for the line.

In some mills all samples are woven on regular production looms which are temporarily set aside for this purpose. The designer must request any special warps and fillings prepared, as well as any drawing-in drafts, dobby chains, or Jacquard cards needed. Arrange-



FABRIC CONSTRUCTION SHEET for a 90 x 64 twill suiting. This is a handy way to record the necessary manufacturing information for fancy and dobby fabrics. Make enough copies for all interested parties.

ments will then be made with the weave room supervision to set up the looms and weave the sample yardage.

When considerable sample work is to be done, it will be found advisable to allocate certain looms to the designing department for this purpose exclusively. This will avoid any interference with regular production and allow the designer to do his experimenting without being pressured to release the loom for production use. It will also be more convenient for all concerned if the sample looms can be installed in a separate room or at least partitioned off from the weave room.

Any warping, winding, and other preparatory machinery that can be set aside for sample purposes will also serve to the advantage of both the design and production departments. Competent loom fixers, weavers, drawing-in operatives, and other personnel should be available to the designer for sample work.

Sales Promotion. The preparation of sample swatches, headends, booklets, salesmen's samples, and other sales promotion items may also be handled by the designer under the direction of the sales department. Those larger mills that maintain a publicity department will likely call on the designer at times for special samples of various types.

Sample garments, specially upholstered pieces of furniture, drapery sets, and other articles illustrating the end-use of the mill's products will also be required for sales promotion at times, and the designer will usually be called upon for the selection and preparation of these special samples.

Display windows are sometimes maintained at both the mill and sales offices, and the designer will usually be in charge of arranging and periodically changing these displays.

Determination of Standard Costs. Standard costs may be prepared by the designing department for all styles made by the mill. In addition, costs will likely be required for all samples woven or proposed, in varying constructions and color combinations, as an aid in the final selection of the styles to be adopted. These standard costs will be in a form as required by the mill management, as outlined by the cost department, and should contain all pertinent information needed to establish a standard or tentative cost.

Fabric analysis and cost figures will also be required of imported samples and competitors' fabrics in order to keep the mill management informed of the market trends.

Fabric analysis will require the determination of the yarn counts and fibers used in the sample, the sley, picks per inch, kind of loom required, types of dyestuff used and finish applied, and other de-

tails. Some of this information can be determined by a designer; other will require the services of a laboratory technician.

Laboratory Testing and Quality Control. Small mills which are not equipped to do laboratory work will likely depend upon some outside service agency. The selection of samples to be tested and the correlation of the reports received will be the responsibility of the designing department. A larger mill, equipped with an adequate and properly staffed laboratory, will still require the cooperation of the designing department for the testing of new styles and outside samples; the designing department probably will still make its own selections of samples from current production for routine testing and quality control.

The designing department will be expected to furnish a certain amount of information and to evaluate the laboratory reports received for the benefit of the management and sales departments.

The same applies to quality control. For some mills and for certain fabrics, occasional spot checks by the designer, in cooperation with the cloth room overseer, will be all that is required to maintain quality. Other mills may maintain a quality control department which will make inspection reports on all production to the management. In this event these reports should be made available to the designer as a guide in retaining colors, constructions, yarns, and fabrics in the line—and to guide him in establishing new ones.

In conclusion, it will be noted that the functions of the designing department extend far beyond the mere making of new patterns. The designer will work at times in active cooperation with almost every department of the mill, in the preparation of new styles and in other lines of endeavor. The more knowledge that the designer possesses of the workings of other departments, the easier his task will be and the more value his department will be to the mill.

Waste Disposal Problem Solved

Underwater Effluent Line from Dyehouse Is Assembled on Lake Shore

BY W. E. McFEE
Armco Drainage & Metal Products, Inc.

EXCLUSIVE

THE CRAMERTON, N. C., plant of Burlington Industries, Inc., had for some years been discharging the effluent from its dye plant into the sanitary sewer system. The dye waste overtaxed the system, causing manholes to overflow. To relieve this condition, it was decided that the proper solution would be to carry the effluent from the dye plant 3720 feet to the channel of the river, where there was a steady flow of water that would dissipate any discoloration in the dye waste.

The laying of a 24-inch pipe line carrying the effluent from the dye plant for a distance of 500 feet underground and 3220 feet underwater was not a new problem for the mill engineers. Several years ago engineers of Armco Drainage & Metal Products, Inc., had helped solve a similar problem at the Dublin, Virginia, plant. This first installation had proved successful, and Armco again was asked to assist in engineering the line for the Cramerton job.

The first 500 feet of the line is installed underground from the dye plant to the edge of the water. The remaining 3220 feet rests on the bottom of the lake. That part of the line leading from the dye plant to the water's edge is Armco 24-inch Asbestos-Bonded Pipe, asphalt-coated and quarter-paved, while the portion under water is simply coated.

Paving was unnecessary in the line resting on the bottom of the lake because it will be running full at all times and the velocity of flow will be so low that there will be no erosion problem.

John V. Barger and Co., of Mooresville, N. C., was the contractor; the procedure for laying the pipe was devised by this firm.

The entire underwater line was assembled in 18-foot lengths on the shore and pushed out into the water as each joint was made. The open end of the first pipe was fitted with a water-tight wooden plug as a safety measure and supported on a wooden raft to keep it above water. All joints were made with 2-foot, one-piece bands and six threaded rod hoops. The ends of these rod hoops were passed through tex lugs and drawn up tightly with standard nuts.

To insure water-tight joints, the asphalt coating was heated with a blow torch at the point where the pipe fits under the end corrugations of the bands. The asphalt then flowed slightly under pressure of tightening. The torch was used again after the joint was made up to insure a tight seal.

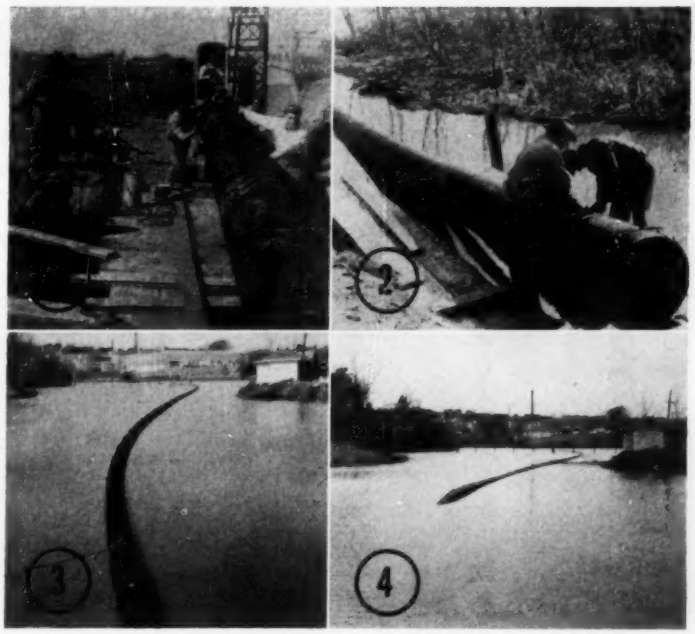
Used motor oil was wiped over the entire area of the pipe under the bands to facilitate the band sliding over the pipe as it was drawn up tight. All nuts were tightened with an air-operated wrench. Although the line floated on the water for more than three weeks before the assembly was completed, no serious leaks developed.

Even when more than 3000 feet of pipe was floating on the water, it was a simple matter for four men to push the line farther into the lake as each new 18-foot section was added. In a normal 8-hour

DYEHOUSE EFFLUENT LINE extends underwater for 3220 feet; photo was taken during construction, shows 3100 linear feet of pipe floating on lake at Cramerton, N. C.

working day it was possible for a foreman, a crane operator, and seven laborers to join and float into the lake from 360 to 400 linear feet of pipe. An additional man in a boat guided the forward end of the pipe and adjusted guy wires to keep the line in proper position.

When the entire line was assembled, it was guided into proper position and the open forward end unplugged. This permitted water to enter the pipe and sink it into position, completing the installation.



STEPS IN CONSTRUCTION of the pipeline: **1.** Pushing the line farther into the lake before making another joint. **2.** Installing a test plug. **3.** Pipeline held in position by guy line before being sunk. **4.** Line being sunk into position.

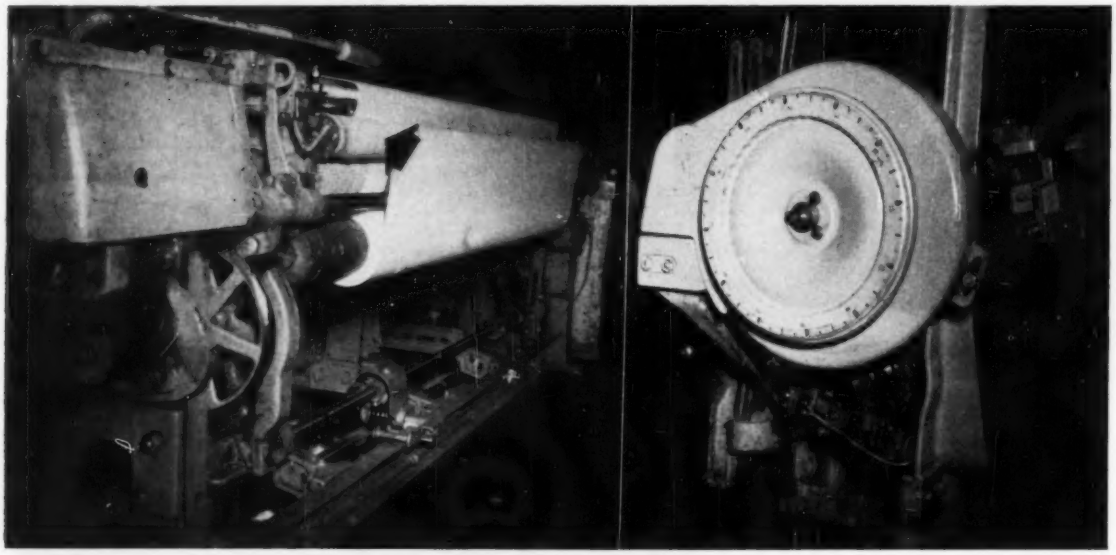
Swiss Looms Adapted to American Mill Conditions

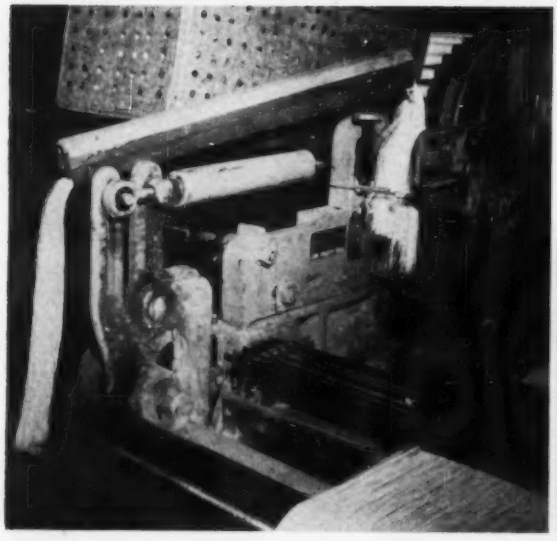
STAFF PREPARED

EXCLUSIVE

Bruck Mills Limited, Sherbrooke, Quebec, installed 40 75-inch Swiss Ruti looms in their spun rayon weaving department about a year and a half ago. Wherever feasible, the looms were adapted to American mill conditions, and after a brief running-in period, operating speeds have been gradually stepped up from 162 to 182 picks per minute. Some of the refinements that contributed toward this accomplishment are shown and explained in the accompanying photos and captions.

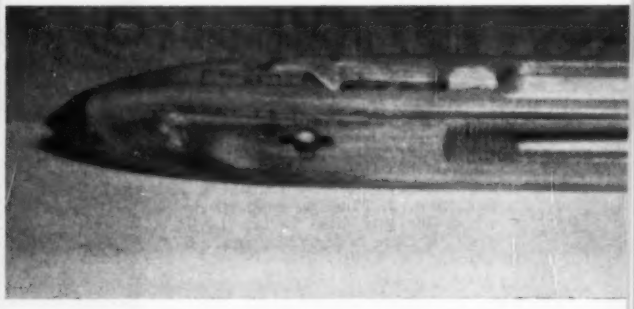
FELT-COVERED STEEL ROLL was added to take-up train (arrow in left photo) so that cloth rolls can be doffed without stopping looms. Roll secures tension on cloth weaving down, through its contact with cloth on sand roll. Right: Large-diameter hand wheel was installed by the mill to make it as easy as possible to turn in finding a pick. Numbers were put on hand wheel by loom builders for use in measuring crank shaft position when timing loom.

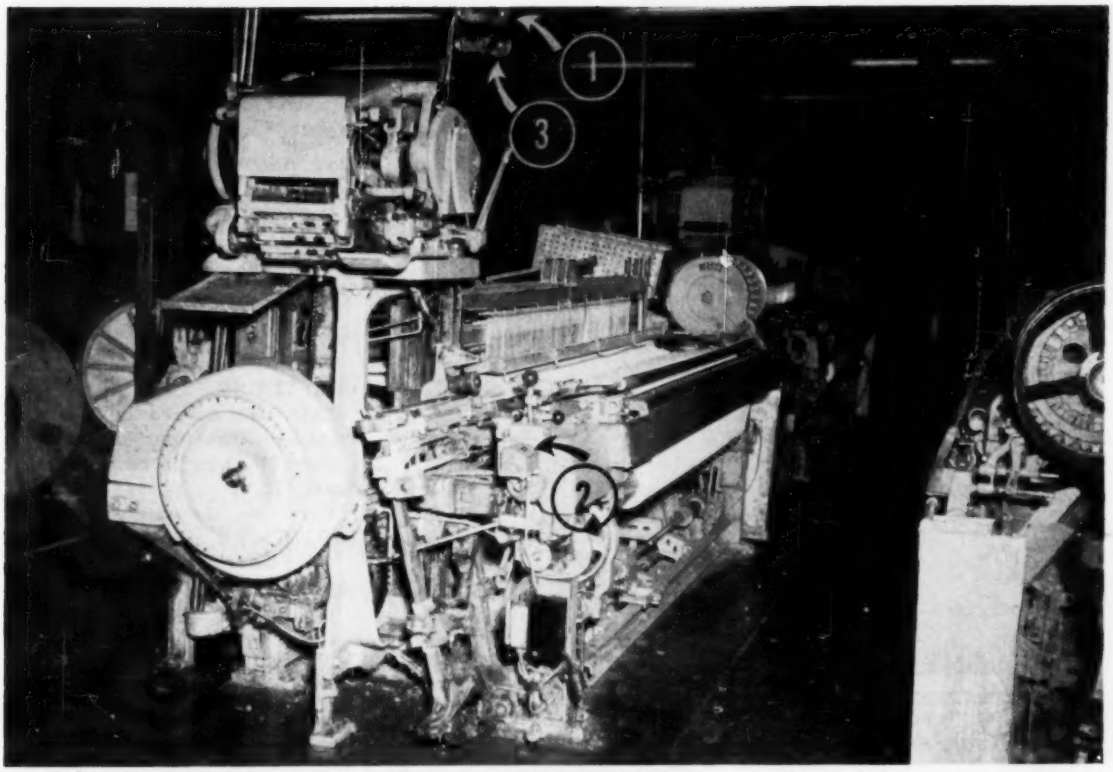




PIECING-END HOLDERS were built to keep spare ends straight and covered. Position of holder is in keeping with minimized overhead structure of the Ruti loom.

SHUTTLE EYE (arrow 1) was revamped: The back wall was cut away in a curve to eliminate end breakage from warp catching on straight wall; a rigid type of tension pad was installed. A pin was installed in

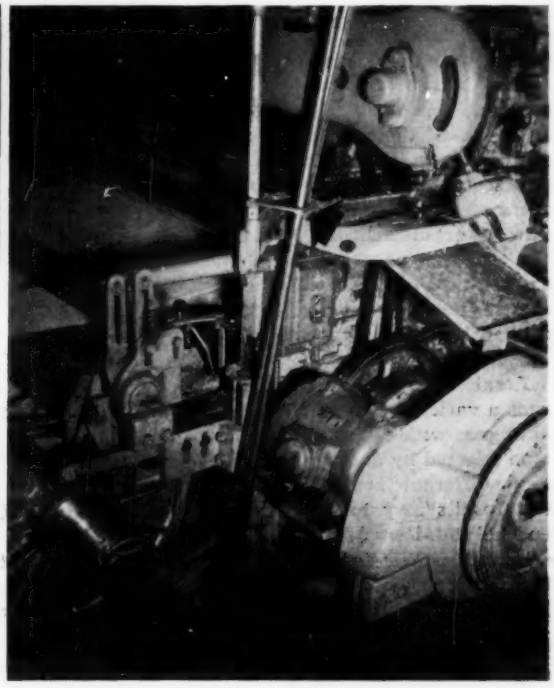




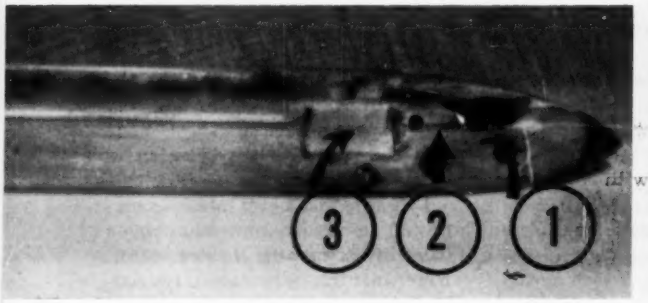
LOOMS ARE WIRED for two lamp annunciator signals. Red light (arrow 1) is hooked into cut meter (arrow 2). When cut meter registers preset yardage, light flashes, signaling cloth doffer. White light (arrow 3) is manually operated by weaver to signal loom fixer.

QUILL BOX STAND was built away from loom to isolate filling yarn on quills from loom vibration, which may cause yarn to slough from quills.

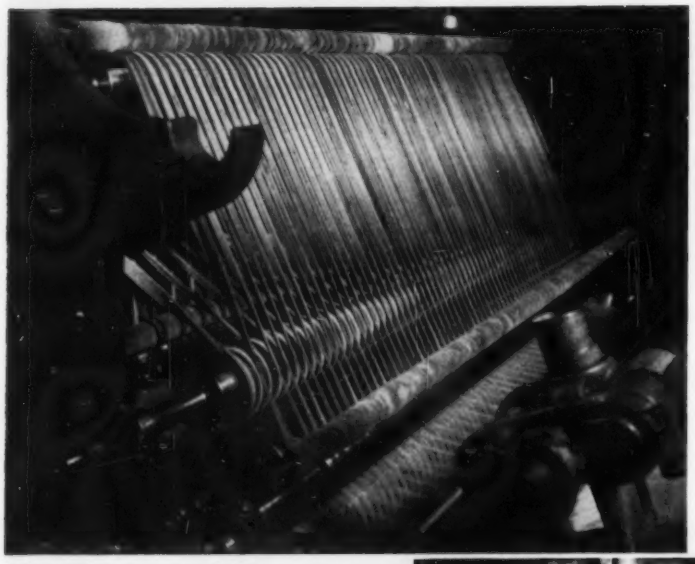
BRACKETS (arrows) were added to left rear of loom. They hold several base rods and drop wire bars, keeping them handy but out of the way.



yarn groove near eye (arrow 2) to minimize shuttle cutting by yarn, and filling cutter slot (arrow 3) was reshaped.



Synthetic Condenser Tapes Improve Woolen Yarns



NEW SYNTHETIC TAPES have kept square edges, improved yarn uniformity noticeably.

STAFF PREPARED

EXCLUSIVE

A PROMINENT North Carolina woolen mill was replacing worn condenser tapes on Whitin cards and decided to try a set of synthetic tapes. Two sets were installed, with notable results.

The carders, overhaulers, and overseers immediately commented on how well these condensers ran from the start. No break-in period was required, and the condensers operated smoothly from the first start after installation. This mill was spinning 5.25-run synthetic and 7-run wool yarns. Since the change, the mill has also spun 4-run wool.

Results. Any woolen mill that runs a variety of yarn counts may not agree with a "best all-'round" tape selected by another mill spinning different counts. However, test results may be found useful and helpful. Here are some results achieved with different condenser tapes in one woolen mill.

Yarn uniformity was improved considerably, according to a spokesman for the mill. Some of the recorded results are as follows:

Card No. 1 (with old tapes) 89.6 NU*

Card No. 1 (with old tapes) 92.55 NU

Card No. 1 (with old tapes) 85.7 NU

All tests were made on different days and with different lots of wool. Another test showed the following:

Card No. 1 (with new synthetic tapes) 74.3 NU

Card No. 2 (with old tapes) 78.5 NU

Card No. 3 (with old tapes) 79 NU

Card No. 4 (new tapes, formerly used) 73.2 NU

Later tests showed the following results on these four cards:

Card No. 1 (with new synthetic tapes) 78 NU

Card No. 2 (with old tapes) 80.9 NU

Card No. 3 (with new synthetic tapes) 72.5 NU

Card No. 4 (new tapes, formerly used) 76 NU

MINIMUM STRETCH HAS BEEN EVIDENT on synthetic tapes; adjustment has been moved only ¼ inch since tapes were installed.

Over-all ends down have been reduced noticeably, although the determining factor is not entirely fixed because the blend of stock was changed also (in addition to changing tapes).

Life of the new tapes is expected to exceed nine months on basis of six months service so far. Nine months was formerly con-

*NU = nonuniformity

sidered normal life expectancy of tapes in this mill.

On basis of running new tapes 14 months, a well defined saving will be made in condenser costs in terms of monthly cost scheduling. The new tapes must last 56 per cent longer than the type formerly used to attain the goal that has been established.

Advantages. The new tapes are easy to clean with a detergent and have been cleaned only once since installation about 6 months ago. There is a minimum of stretch evident, in that the adjustment has been moved only ¼ inch since the tapes were put into operation, thereby minimizing tape sag with attendant poor work and subsequent adjustments.

The tape has kept square edges, assuring good quality yarn.

The tapes used are supplied under the brand name Supr-O-Tape by the Benjamin Booth Co. of Philadelphia, Pa.

Merchandising

Panel Discusses Style Trends as Affected by Man-Made Fibers and Blends

STAFF REPORT

AT THE TEXTILE Distributors Institute October 1955 Fabric Styling Clinic in New York, representatives of the mills, man-made yarn producers, converters, retailers, and cutters gathered to hear about and discuss subjects relating to synthetic yarn dress and sportswear fabrics.

The use of these textile products is not keeping pace with increases in consumer spending as compared with hard goods. The clinic, focusing on this problem, proposed a solution in more attractive styling, consumer education, advertising, promotion, and publicity.

Here is a digest of the panel discussion on the first of these subjects, "Style Trends As Affected By Man-Made Fibers And Blends." Moderator was **Ira Jacobson** of Cohn-Hall-Marx Co. Serving on the panel were members of the fiber producing, fabric finishing, styling, and distribution segments of the industry.

To **Weldon G. Helmus** of Fairlawn Finishing Co.:

Q. What control can a dyer and finisher have over styling?

A. In most cases a dyer gets his instructions as to color, hand, and functional finish from his customer. There is no reason why the dyer can't experiment with a small quantity of customer's goods to produce new ideas of his own. We've done it and have always found the customer willing to look at something new. Many basic fabrics have thus been sold on the strength of some special finish.

To **Budd Levinson** of Fabrex Corp.:

Q. Color and the washability of knitted separates made from synthetics have provided an increase of use in that fabric field. Have the same attempts been made in woven goods with the new fibers?

A. This concerns the use of the acrylics in knitted outerwear, where man-made yarns are placed directly into the garment in one operation, simply. Weavers and converters have also done a lot along these lines quickly and gained trade acceptance, although the products are not perfect. Weavers still don't have all the answers to this one.

To **Richard Roaman** of Reliable Textile Co., Inc.:

Q. Can converters provide assistance to the fiber producers and the mills in styling the new fibers? Is the price of the new fibers a deterrent?

A. Because of the close contact with the cutter, near future style trends are quickly picked up by converters. This goes for functional needs in fabrics as well, such as washability, dimensional stability, etc. In addition, the converter gets a line on color requirements; and for such functions as guiding producers of dope-dyed yarns, this is a quick and efficient way to be of service.

On price, the man-made fiber price schedule is to some extent an obstacle because it is higher than cotton and rayon for use in the volume fabric market. This has been circumvented in two ways: (1) by production of lightweight fabrics, and (2) by an elevation of price acceptance in the mass markets.

To **M. Kenneth Ryan, Jr.** of E. I. duPont de Nemours & Co., Inc.:

Q. What recent progress has been made in styling blended fabrics?

A. We have made studies on control of fiber shrinkage, denier-per-filament requirements, and fiber composition. For example, by mixing high and low shrinkage fibers such as Orlon and Dacron, we can throw the Orlon on the outside of the yarn and Dacron on the inside to get a softer, so-called cashmere hand outside and still impart the useful Dacron properties to the blend. We can also reverse this.

To **Pierre Sillan** of Burlington Mills:

Q. What about bulking?

A. We've experimented with many types of bulked yarns in many constructions and predict a bright future for them. In one application where air is used to fluff up a filament yarn, we get a good hand which is characteristic of neither filament nor spun knitted and woven goods. All fibers gain by this process; color seems to be brighter and crease resistance is improved. These yarns can also be usefully mixed with spun or filament yarns.

To **Robert E. Smith** of The Chemstrand Corp.:

Q. What do man-made fibers offer in styling that is not possible with the natural fibers?

A. We're about one season away from seeing the full utilization of

man-made fibers come into being. There's a piece dyeing potential at low prices, the introduction of bulking techniques, and in acrylics, new deniers, wide color ranges. In acrylics, mixture of two different types in a blend will allow cross-dyed effects and still be 100 per cent acrylic.

To **George B. Suhrie** of Fox-Wells & Co., Inc.:

Q. What have new fibers contributed to changes in fabric construction?

A. The new fibers have opened up new fields in fabric engineering; we can produce fabrics to meet any requirement. Some new fibers and their outstanding functional contribution to a fabric are: nylon—strength and abrasion resistance; Dacron—crush resistance; Orlon and Acrilan—bulk; dynel—plasticity; Vicara—softness.

In response to questions from the more than 500-person audience, panelists commented as follows:

Q. Why should we use two acrylics in a blend to get cross-dyed effects?

A. (*Mr. Smith*) It adds versatility to a color line of 100 per cent acrylic fabrics. If, for example, a solid line of colors is available in 100 per cent acrylic, the same percentage can be maintained to get two-color effects.

Q. What is the future of solution dyed filament and staple yarns in women's wear fabrics?

A. (*Mr. Suhrie*) A bright future lies in extensive use of dope-dyed yarns for the so-called loom-finished fabrics which are shipped to the customer right from the weaving mill.

Q. What is being done to overcome the lack of moisture absorbency in many man-made fibers?

A. (*Mr. Ryan*) Lightweight fabrics have been made which provide moisture dispersal. However, moisture absorbency of the fiber itself is becoming a small factor in the comfort picture as our studies have shown this to be of minor importance in carrying moisture off from the body.

Q. Does fashion have a bearing on color fastness?

A. (*Mr. Helmus*) Colors come into style and must be matched by the dyer to various types of fabrics. For example, shoe cloths must oftentimes match a color used on a dress fabric. To account for differences in basic luster and construction in the cloths and to match unusual shades, a small quantity of a dyestuff must be used that is not always of the same fastness as the base color. This throws all fastness off. It would be helpful if we stayed with only those colors that we know are fast.

(*Mr. Ryan*) High fashion often dictates the color requirements. Because of limited washing applied to high priced garments plus the amount of trimming usually on them further prohibiting washing, many types of color fastness are not important in high priced fabrics. However, when adapted to medium bracket fabrics, fastness is important in such features as wash and wear.

Q. There has been talk of using a three-fiber blend to get a three-color effect in dyeing. What three fibers can be blended to get a minimum of staining and good fastness?

A. (*Mr. Smith*) The selection of color is very important, regardless of what fibers are used. In commercial production are two blends: (1) rayon, acetate, and acrylics and (2) wool, rayon, and acrylics.

(*Mr. Helmus*) An old one is acetate, viscose, and wool. A common practice is to use a dope-dyed acetate fiber plus acetate and viscose and two for the two latter fibers only.

Vat-Color-Conscious Trade, Consumers Is Aim of USF-Aspinook

AN INSTRUCTIVE brochure on vat colors, titled "What's Your Score on Vat Dyes?," has been prepared by USF-Aspinook Finishing Division, Gera Corp., printers of slipcovers and drapery fabrics.

The brochure, which has been mailed to buyers of decorative fabrics in department and specialty stores, is now being made available to sales training directors, advertising, sales and merchandising personnel, as well as to interior decorators. It is free, upon request.

Prepared with a view to enlightening and educating the trade and consumers on vat colors — what they are, and why superior performance can be expected of them — it is expected that the vat color information will be used, in turn, to educate the consumer-public through more helpful and informative advertising, display, publicity and promotion, as well as authoritative explanations and recommendations at time and point of sale.

This is one of the first educational aids to be issued in the vat color program which was instituted by USF-Aspinook last January, and in which seven dyestuff manufacturers are now cooperating through synchronized advertising and sales training aids.

Further evidence of the acceptance of the USF-Aspinook program is the fact that more than 20 converters are lending support to the effort by adopting the official emblem of the campaign and are using the hang-tag (reproduced

here) which identifies all fabrics vat-processed by USF-Aspinook. It is dark blue and gold, with three crossed keys and the legend "Vat Colors—The Keys to Satisfaction."

How Do You Measure Stretch at the Slasher?

Everyone seems to have a different idea as to how this should be done. Spend a few minutes reading this digest of Georgia mill practices on this and other phases of the yarn sizing operation. You may come up with a suggestion that will mean "money in the till" for your own employer

STAFF REPORT

OVER 300 MEN interested in slashing, weaving, and maintenance problems left their textile mills on the week-end of October 29, 1955, and journeyed to Atlanta, Ga., to attend a general meeting of the Textile Operating Executives of Georgia and participate in the open forum discussion of these subjects.

Held on Saturday morning in the Harrison Hightower Textile Building at the Georgia Institute of Technology, the gathering drew men from practically every weaving mill in Georgia and some from the neighboring states of South Carolina, Alabama, and Tennessee.

Presiding over the meeting was the association's General Chairman, **E. Allen Bentley,** assistant to the president of Swift Mfg. Co., Columbus, Ga.

Discussion leaders were: Slashing—**Lloyd K. Williams,** superintendent of the Peerless Plant of Thomaston (Ga.) Mills; Weaving—**E. J. Crocker,** superintendent of Strickland Cotton Mills, Valdosta, Ga.; Maintenance—**Mac Isaacs, Jr.,** superintendent of the Anderson Plant of Bibb Mfg. Co., Columbus, Ga.

Officers elected to serve during the year 1956 were: General chairman—**J. Alex Fife,** superintendent of Scottdale (Ga.) Mills; vice general chairman — **George McMillan,** superintendent of Crystal Springs Bleachery, Chickamauga, Ga.; secretary-treasurer — **Herman A. Dickert** (reelected), director of A. French Textile School, Georgia Institute of Technology. **Willis S. James,** superintendent of Summerville (Ga.) Mfg. Co. was elected to fill Mr. McMillan's unexpired term on the executive committee, and **Charles E. Rich,** manager of Pineview Division of Callaway Mills Co., Milstead, Ga., was elected to serve on the committee for a full term of two and one-half years, succeeding **John I. Alford,** superintendent of Covington (Ga.) Mills.

The answers to the questions submitted to the mills in preparation for the meeting and comments made during the open forum discussion have been analyzed by the editors and are summarized here for the convenience of TEXTILE INDUSTRIES' readers:

Measuring Stretch at the Slasher. Analysis of the methods given for measuring stretch at the slasher reveals that seven of the 16 mills responding to the question apply a yardage counter to the yarn sheet as it enters the size box and another to the yarn sheet at the delivery end of the slasher (either on the delivery or nip roll), run slasher until a predetermined length (some use 500 yards, 1000 yards, and others run an entire set) is registered on the counter at the size box, then stop the slasher and get the reading on the counter at the delivery end. The difference between the two readings is then converted to per cent stretch.

Preference of operating executives in five plants, instead of taking a measurement just before the yarn enters the size box, is to check yardage at the last beam in the creel.

Here are other methods suggested:

Mill B: We have a yarder on the front guide roll and measure the full length of the warp. Then we take this reading and known yards on the section beam and figure per cent stretch from it. We check this method by occasionally placing a yarder on the section beam as it unwinds in the slasher creel.

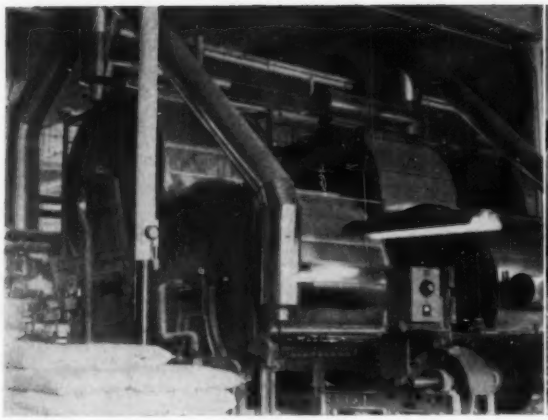
Mill D: Check points employed at our slashers are the first section beam behind the size box and the loom beam being filled. We measure the yards released from the section beam and the yards wound on the loom beam simultaneously for a given period of time. Stretch is determined in this way.

Mill E: We check the stretch on our slashers once every week by using three . . . yardage counters at the following points: (1) nip roll on front of slasher; (2) guide roll at rear of size box; (3) second or third section beam from rear of creel.

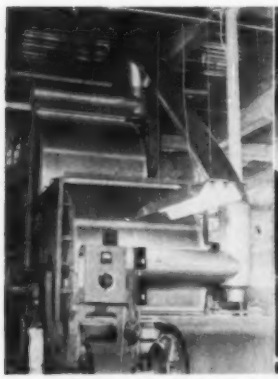
Mill I: We measure our stretch by tying yardage counter at any desired location and run 1000 yards from this point and then check yard clock on front to determine per cent of stretch. We test from back section beam to front of slasher, from back section beam to front section beam, from front section beam to size box (over pre-dry cans).

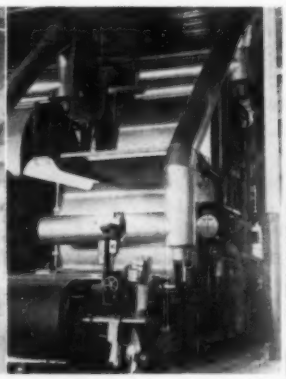
Experience with Homogenized Size. Five Georgia mills reported these benefits to be derived by using homogenized size: Reduction in cooking time ranged from 25 to 100 minutes per kettle; pearl starch is being used now, whereas all had previously used thin boiling starch; no difference was noted in either shedding or weaving efficiency when four of the mills started using homogenized size. Less shedding, which was believed to be due to better size penetration, and improved weaving efficiency were other advantages cited by one of the plants. Homogenization pressures ranged from 1500 to 3500 psi. Three of the five mills found it necessary to decrease the amount of solids in their size formulas to maintain proper pick-up when changing to homogenized size.

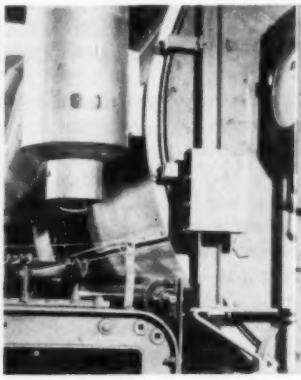
In its comment on savings as a result of homogenization, **Mill K** pointed out that its reduction of 25 minutes per kettle in cooking time produced an estimated saving of $4.50 per week in steam cost,



THE SHIRLEY HOOD covers practically the entire surface of the two big cylinders on the slasher as shown in the left photo above. Right photo: Scene on roof over slasher room in mill where all slashers are equipped with Shirley hoods, showing the large capacity fans incorporated in the hood design. Note that there is one fan serving the hoods on each slasher for efficient removal of a large volume of air.







HOOD CONSTRUCTION DETAILS may be seen in these close-up photos. At left are two views of the delivery end of a slasher fitted with Shirley hoods, one made from the left side and the other from the right. At right are two views of the hood; note in the first how close the hood is to the cylinder surface and in the second ends (indicated by arrows) of the hoods on the upper and lower cylinders.

but also said that this saving is offset by the power cost to operate the homogenizers which is approximately $15.50 per week. Cost of upkeep and repairs on the homogenizers at this mill has amounted to an average of $8.60 per month per homogenizer.

A mill man raised this question during the meeting: "Does homogenized size create a desizing problem for the finisher?" No complaints had been received by the operating executive who responded.

Speaking extemporaneously on the subject of homogenization of size was another gentleman who was most enthusiastic in his report about an automatic size cooking apparatus called the Sizeometer [see TEXTILE INDUSTRIES for February, 1954, page 133] which was recently installed in his mill. It cooks the size under pressure and mechanically breaks it down as it is drawn from the bottom of the kettle by a large centrifugal pump and returned to the kettle through an internal cooker.

Incorporated in the equipment is an instrument for recording and controlling the viscosity of the size; a 24-hour chart provides an accurate record of the size cooking operation. Viscosity of the size mix is controlled within five centipoises of the desired viscosity. Cooking time has been cut in half since the Sizeometer was installed. 14-18 mixes are prepared every 24 hours.

Asked how often cleaning of the equipment is necessary, the spokesman said that water is run through it after each mix is prepared; equipment is taken apart once a week and thoroughly cleaned.

A maintenance tip for mills with homogenizers was given by another mill man: "We keep the homogenizing surfaces of the valve and valve seat in good condition by lapping them once a week."

Synthetic Squeeze Rolls. Four Georgia mills using synthetic covered squeeze rolls at both front and back positions on the size box seem highly pleased with them. Three find that when yarns processed on slashers equipped with synthetic covered rolls are compared with yarns from machines with wool blanket covered rolls they are more uniformly coated

with size. Fewer stuck ends and longer shaft life were other advantages cited by one of these mills which estimates that the synthetic rolls will pay for themselves in less than one year. Slasher speed was increased from 35 ypm to 52 ypm at **Mill J** when blanket covered rolls were replaced with synthetic.

As to size pick-up with synthetic covered rolls as compared to blanket covered, it varied from 3 per cent less to 1 per cent higher among the mills reporting.

The synthetic rolls are buffed "when needed which is probably about once every two years" at **Mill A** where 9s to 34s yarns are processed, 1950 to 8715 ends. At **Mill P**, where the average yarn count is 20s with a total of 2000 ends per set, the buffing cycle is once every three to four months.

Spokesman for a mill sizing 31s yarn with sleys of 28 to 80 was asked if his synthetic covered rolls were of the tapered density type. He was of the opinion that the density of the cover was the same throughout. Asked if weighting on the rolls was changed when covering was changed from blanket to synthetic, this gentleman responded that it was not, since the covering added 40 pounds to the weight of each roll. Front and back rolls used at this mill weigh 500 and 550 pounds respectively.

Size Viscosity Control. There were eleven written answers, all of them different, to the question asking for an explanation in detail of the system used for testing and control of viscosity of size. From the standpoint of equipment, however, procedure at two mills is similar in that viscosity cups are utilized; three plants have viscometers for this purpose.

Viscosity of the size in storage and cooking kettles is tested every 24 hours in one of the mills using a viscosity cup. Here is the way it is done: With a stop watch an operative measures the time required for a standard amount of size to drain from the cup through a standard size spout or opening. With the cup used at this mill, a period of 18 to 20 seconds is normal for 11 per cent pick-up on the yarn. If the time should fall below 16 seconds, the supervisor is notified and the next mix is usually varied to bring the viscosity back to normal. Once a month samples of raw and sized yarn are analyzed for moisture, size content, and natural extraction.

Asked from the floor how much variation is found from batch to batch, a spokesman for the mill reported 1 to 2 per cent variation. Pearl starch and conventional cooking procedures are utilized—size is not homogenized.

At **Mill K** a recording viscometer is installed on the size storage kettle that holds the heavy size mix. To control viscosity, a water meter is utilized to draw water for each kettle of size. The size man carefully weighs and measures the ingredients that go into each kettle. Each kettle is brought to a boil and cooked the same length of time by automatic controls. Homogenizer pressure is kept standard for each kettle.

Size cooking equipment in another mill is designed so that it automatically cuts off when the desired viscosity is reached. Control is set on the instrument panel prior to start of cooking cycle.

Changing to Larger Section Beams. Reproduced below is the only reply received to the request for experience with 36″ and 40″ warper beams:

"We have changed from 26″ warper beams to 38″ beam heads. Following is our comparative data for 20s warp yarn before and after the change:

	26″	38″
Ends per beam	320	384
Yards per beam	25,000	50,000
Pounds per beam (net)	476	1,143
Yards per cheese	25,000	100,000
Beams per creel	1	2

Someone asked, "Is he using the D type spooler?" In the absence of a representative from the mill, the discussion leader answered, "Yes."

Mill Pleased with Shirley Hood for Slashers. Two years ago Shirley hoods were installed over eight three-cylinder slashers in one Georgia mill and, according to the written report, "their installation and use have proved quite satisfactory." On a typical style with 2,560 ends of 8.75s yarn, production is now 860 lb/hr, whereas with conventional hoods it was only 750 lb/hr. Considerable improvement in working conditions is another advantage.

Questioned about this hood during the meeting, a representative of the plant said that it covers the entire surface of the two big cylinders. A high capacity fan incorporated in it removes a large volume of air. He amplified the comment regarding improvement in working conditions by saying that the slasher room is now cooler in summer and there is no condensation on the ceilings during the winter months.

Processing Wet Beams. To prevent wet beams from becoming heavy sided and avoid having to use more weight on them in the slasher creel, the general practice in Georgia mills is to rotate beams by hand at regular intervals. A specific answer to the question was furnished by one mill: "Wet beams are stored horizontally and rotated 180° each 8 hours."

Trouble with selvages when starting up sets seems to prevail in Georgia mills where beam dyed yarn is sized. Even in a plant where it is not necessary to turn the beams at the slasher since practically all of the water is removed from the beams by means of dryers in the dye house, some difficulty is experienced with ends blowing down between the heads of the beam and the yarn. Beams on which the yarn has left the head about ¼″ all the way around are occasionally received in another plant. This does not present much of a problem, however, unless some ends fall into the space. When it occurs, slasher operatives lap the number of ends required and continue to run the set.

In response to a question, "How much moisture do you leave in warp between pre-dry cans and slasher size box when slashing beam dyed sets?," one mill reported 15 per cent and another said between 8 and 10 per cent, depending to a great degree upon the style being processed.

[*Note: Digest of Weaving and Maintenance Discussions will appear in an early issue.—Eds.*]

Electronics in Your Future

BY THOMAS J. FOX*

EXCLUSIVE

THE AMERICAN textile industry, perhaps the world's most competitive major industry, continues to live dangerously and to enjoy it. It was also the first major industry to emorace the "cure-all" of automation. Automation has been in active and forceful development for thirty years or more in textiles. However, in an industry in which every member must be a doer to survive, no one even bothered to coin a catchword for these developments.

Whether automation masquerade under the name of quality control, job assignment increases, or some other deceptive phraseology, it is a safe bet that all mills have benefited from the developments that have tended towards increased continuity of the productive operations. The trend has for years been towards increased package sizes from all operations.

Limits of Machine Speed-Up. However, while these improvements have consistently reduced costs and have increased the quality of product, there are still many areas in which little or nothing original has been done for extremely long periods of time.

The vogue has been, by one means or another, to run a strength of materials check on a given piece of equipment, and finding it by and large overdesigned, to speed it up somewhat closer to the critical limits. The machinery manufacturer has made the formal detailed part by part analysis; the mills have arrived at the same answer through the practice of continually increasing speeds and accepting a higher replacement rate on the failing parts until someone could spare the time for redesign.

Those who have spurred on or ordered this advance have made one of the greatest social contributions in recent history. This undeniable truth reflects to the credit of all. Yet, in all honesty, it must be admitted that we in general are fast approaching the point of diminishing returns in the current course.

New Efficiencies Possible. What is needed is a complete change in concept. Let us squarely face the fact that the frontiers of technology were within reach of those designing the prototypes of almost all of the machinery in use today. With the recent and continual advancement in industrial science, entirely new methods are possible.

The two logical developments for the future are obvious—controls and other devices can and will be developed to operate, tend, or service the present machinery; and entirely new methods of manufacture, taking advantage of all the technological advances to date, will be developed — replacing equipment with which there is no recognizable connection.

A Start in Machine Control. We are definitely through the door of the first phase mentioned here. The finishing end of the textile business has made much more rapid progress than any other segment of the industry. Automation is here in any finishing plant pretending to be modern today. Such developments as continuous peroxide bleaching ranges, pad steam dye ranges, and the almost standard finishing range are in general use and provide the minimum requirements for the most economical production—a fixed continuity of operations.

However, unlike the very closely related chemical industry, few mills carried through the program to the complete instrumentation of the process. Most operate with only the minimum controls necessary to insure some utilization of the equipment. More often than not, measurements and controls which have as direct a relationship with the profit and loss statement as with the material being processed are left uncontrolled.

Finishing Plant Needs for Control. Millions and millions of yards of cloth are dried every year, "dry to touch." The qualifications necessary to make a continual water content analysis by touch are not too stringent. The operator need only be the next man on the list when the previous range or dryer tender gives notice.

Vast quantities of steam are consumed in our various drying operations. Yet steam is so seldom metered to a specific piece of equipment that many equipment suppliers are unable to confirm fifteen and twenty year old consumption estimates in the field. That this type of ambiguity should exist after several hundred units have been delivered and put in use during the same period is extremely difficult to believe.

There are other large areas in finishing plants which are largely still patrolled and controlled by human hands. The various guiding, tension, and continuity-of-process problems, which vary considerably from mill to mill depending on layout, cloth-type, etc., must necessarily soon be solved.

While most guiders will work well for the designed application, it does not take too long before they are installed for totally unsuitable applications. Consequently, we still patrol the range or operation to check on guider performance. In many applications a set of self-regulating, positively-controlled guiders could accomplish considerably more than those currently available; and, while no doubt they would be much more expensive per set, the increased savings and reliability would permit a much greater rate of return on investment.

Photoelectric Controls for Finishing Plants

Tension. Photoelectric tension control is possible on a tenter frame or in any other operation where the tension in the web is a matter of importance. In fabrics where strength varies with moisture content, a control apparatus

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measuring both tension and water content and capable of selecting the condition of optimum output on a continuous basis would probably result in undreamed of production increases where applicable.

Skew Correction. High speed photoelectric inspection is a natural on many types of goods. The present photoelectric weft equipment is a start in this direction. The types now available apparently operate on a rate comparison basis, i.e., the total number of picks per second is one term, or require an occasional fluorescent filling bar*, and must compute and correct for whatever degree of skew exists. Both methods, however, depend on a quotient for correction—one on rate and the other on the tangent of a small angle. Perhaps if additional accuracy is ever required, an electronic circuit capable of an exact filling count will be developed.

However, this equipment possessing the extreme accuracy it does is going a long way toward proving the extremely significant point that a properly designed photoelectric system can perform year in and year out an almost magical service.

Inspection. The problem of photoelectric inspection is somewhat simpler in many respects. First of course is the fact that no rapid count is necessary. The extremely large area requiring coverage no doubt presents problems principally of cost.

Seam Detection. A photoelectric seam detector for wide sheeting is pictured in an accompanying illustration. This is a rather interesting unit designed for the Dutchess Bleachery for use on doubled or doubled-doubled sheeting. It can differentiate between seams and doubler wrinkles, and will work at speeds from 10 to 300 yd per minute.

It was designed to complement and trigger a Beck cutter equipped with a digital computer. The seam detector and the computer will make the standard Perry Table computations and preset the cutter at speeds within 20% of the detector design limits.

The computer will handle four seams in the maze at one time. This unique piece of equipment will operate twice as fast as any previous method.

To those uninitiated in the mysteries of sheet manufacture, some explanation is due. The two most common bed sheet lengths are 99″ and 108″. Twelve of the former and eleven of the latter can be cut from the last thirty-three yards in a piece of cloth. Unfortunately, the last end of a piece is seldom an exact thirty-three yards long, but for every nine inches lacking from thirty-three yards, a different combination of sizes can be cut. This results in a minimum waste situation, which when computed should approach zero.

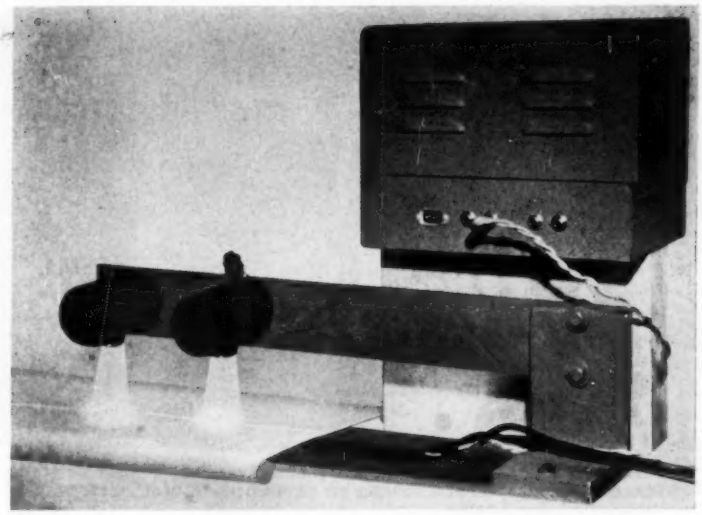
Previous methods necessitated marking seams or risking loss on missed seams. The graphical Perry Table maze, often ignored by operators on piecework, could handle at best only the one seam. So short pieces, which for one reason or another always seem to be around, were often cut at a loss.

Others. Comparatively inexpensive photoelectric equipment can also be used to protect an untended water mangle from a lot that for some reason would prefer to stay in rope form, or to set extreme guide limits, or rope or web form continuity checks where needed.

Not too much imagination is necessary to foresee finishing applications on tenter frames, calenders, and compressive shrinking machines, with the inspection part and parcel of a basic operation.

There are probably many additional uses in the fabric coating industries where the depth of coating or the backing must be maintained to within specific tolerances, where this device with a modified electronic system will be used as control instruments.

Virtually every annoyance or problem in the finishing plant can be solved electronically, quite often with a photo tube of some sort doing perpetual surveillance.

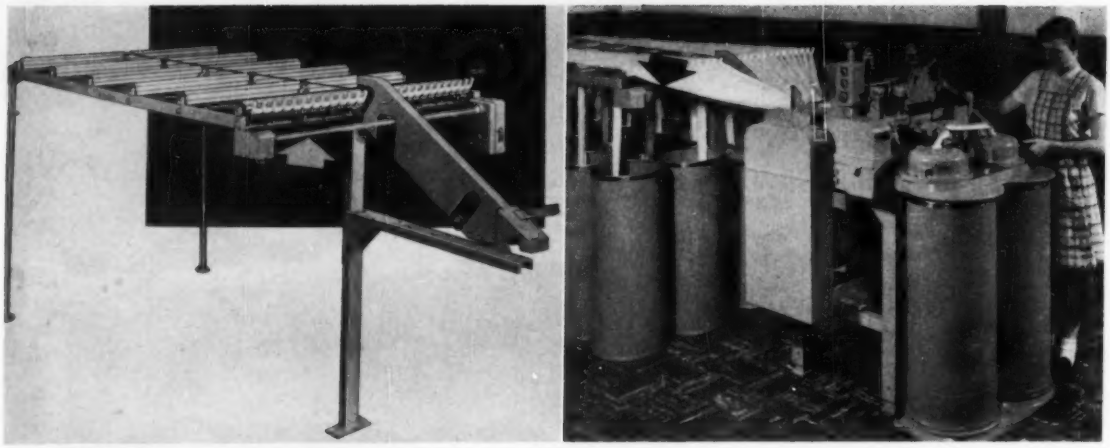


PHOTOELECTRIC SEAM DETECTOR complements and triggers a Beck cutter equipped with a digital computer. It prevents sheet seams from being cut; the computer controls cutting of 99- and 108-inch lengths with minimum waste.

Photoelectric Controls in Manufacturing

Filament Yarns. In the manufacture of multifilament yarns, the problem of one broken filament has recently succumbed to electronics. Lindly Instrument and Machine Corp. has recently announced a puff-ball detector which will photoelectrically pick up the puff-

*One such device has been developed by Fieldcrest Mills [see TEXTILE INDUSTRIES for December, 1954, pp. 77 and 79]. In this device, photoelectric cells respond to any misalignment of fluorescent marks embedded in the cloth, and actuate a weft straightening apparatus.



PIN DRAFTER CREEL is equipped with a photoelectric switch stop motion. Photograph at left shows creel with Photoswitch equipment throwing an uninterrupted beam (arrow). When end breaks in threaded creel, beam is interrupted, Pin Drafter stops.

ball which results from a broken filament. One unit can scan all the ends passing through a given reed or in any position where there is little or no relative motion between the ends being scanned.

Tops. Another photoelectric stop motion device is in use on the Warner and Swasey Pin Drafter creel. This device, positioned slightly below the line of travel of the ends, will act as a stop motion when the beam is interrupted by a broken end. The positioning is such that it is impossible for an end to break without crossing the beam.

Sewing. Many detectors similar to the two mentioned above are possible. Detection of fly in sewing machine thread is essentially the same problem as puff-ball detection. Many users of such thread would willingly pay a premium for a guaranteed fly-free thread.

Take, for example, a quilting manufacturer, to whom each piece of fly is almost a sure thread break, and who must stop from four to perhaps twelve machines to repair each break. Or in a mill such a device installed on representative equipment might serve as a valuable tool in the establishment of cleaning cycles or the positive evaluation of cleaning methods.

Spinning. There are many other detection and counter type applications where the detect and count function of an electronic device is possible and useful. In mills where assignments or rates vary with end break frequencies, it is now possible to electronically monitor thousands of spindles at once and to determine the end break frequency on each frame or side on a per shift basis, or per lot basis, or both. This can, of course, be done on a continual basis, eliminating the monotonous overhead job of the frequency checker, with the added personnel relations dividend of averting any employee doubt of exactly the payment or assignment indicated.

Other advantages could certainly be derived. For example, a definite correlation between ends down in spinning and weaving would certainly be indicated. The same would undoubtedly be true in warp preparation. It might in some instances have a further correlation with the blend or with carding.

On the woolen system the spinner needs no electronic device to tell him one set of rub aprons is set differently from the others on a card. However, an accurate break frequency would no doubt lead to some means of early detection of one of the woolen spinners' and carders' headaches.

While we are discussing woolen spinning, it might be well to add that the age-old problem of running the card jack spool down on the spinning frame until the first end runs out is now susceptible to solution. As this is an historic problem in the industry, it might be added that a solution exists regardless of jack spool core diameter.

In general, it may be said that current spinning equipment must still be creeled, the ends pieced up and doffed by hand. However, the patrol portions of all spinning and twisting jobs may now be done electronically with each spindle receiving individual full time attention. The cost of such service need not be extreme.

Warping. The preparation department has, to a large degree, been "automated" away and beyond the remainder of the grey mill by an assortment of spoolers and winders which are aesthetically satisfying to watch in operation.

However, in the preparation of slasher spools or beams or in dressing from a creel, there would appear to be a direct application of some increased controls. The action of removing the yarn from a headless stationary package through a guide which is centered with the cone and a fixed distance above it often creates a visible tension difference in the individual ends. While some economical means of overcoming this difficulty is possible on all ends, there is little

FABRIC INSPECTOR detects raised filling defects, records and chalks them, all electronically. The unit also records piece length.

doubt that in some portions of the industry an electronic instrument, capable of measuring either change in tension or absolute force on a given end on a continuous basis could be immediately used to advantage. The multitude of variables that would be encountered could then be isolated and measured individually. Again an accurate and reliable study of conditions as they actually exist would probably render these operations as truly continuous as any in industry.

Weaving. Perhaps the most interesting possibility of all exists in the creation of an electronic weaver which would perpetually examine the cloth being woven, and stop the loom for any objectionable fault. It could also record other faults for which it would not be necessary to stop the loom while a given style was being processed.

This would appear to be the theoretical solution for those portions of the industry employing large numbers of burlers and sewers. Cloth as nearly perfect as necessary for a given finish appearance would result.

The electronic weaver is under active development by Lindly Instrument and Machine Corp., who have pioneered the first working electronic inspection machine. While it is felt that the electronic weaver would first interest the woolen and worsted portions of the industry, they point out that cottons and synthetics with their normally simpler weaves and the extremely high number of looms involved could also be interested in a cost-reducing, seconds-eliminating unit tailored to their particular requirements.

Inspection. The automatic fabric inspector previously mentioned could be the first major step in the change of concept. Here is a machine which will detect all raised filling defects—and for which there is a mispick attachment, as well as a recording attachment, which will record graphically piece length as well as filling faults, chalk the faults if necessary, and locate them laterally in the machine if corrective measures are to be taken there. While all the defects are noted mechanically with micrometer accuracy and micrometer limits, all the controls are electronic.

These machines are currently being delivered in ever-increasing numbers exclusively for the designed use as inspection equipment in grey mill cloth rooms.

A Prediction

It is fairly safe to predict that electronics combined with the necessary optical and other means of measurement will become an increasingly important tool of the textile industry.

In our age almost everything is possible. The seemingly impossible only costs a little bit more and can quite often be justified financially by increasing the scope of the project rather than by restricting it. In this age even solutions are cheaper by the dozen.

Mill Boosts Comber Production 2 1/3 Pounds Per Hour

STAFF PREPARED

IN A New England mill making combed cotton yarns a 7 per cent speed increase has been effected on Whitin Model J combers simply by using larger drive pulleys (11½ inches diameter) and increasing the length of V-belts accordingly.

Quality. While the mill has

LARGER DRIVE PULLEY increased speed of combers in this New England mill from 150 to 160 nips per minute, providing production of 35 pounds per hour without reducing sliver quality.

made no formal study on nep formation before and after increase of speed, management does not feel that combers are now making more neps or causing any other quality changes.

Maintenance. The mill notes that there is some increase in maintenance cost, but this is no more than would be expected after any machine speed increase; such increases are offset by cost savings in increased production.

Experience at this mill indicates that points to watch when increasing comber speed are:

1. Detaching rolls will normally belly because of the pressure of stock going through them. When this happens, the web becomes slightly cloudy. Increased speed dictates change of these rolls more often.

2. Detaching rolls (in this mill they are covered with composition material) tend to accumulate wax and get slick. Normally this is balanced by weekly roll washing. When speed is increased, frequency of washing should be stepped up.

Integration and Flexibility --

2 keys to success in this small duck mill

STAFF PREPARED

EXCLUSIVE

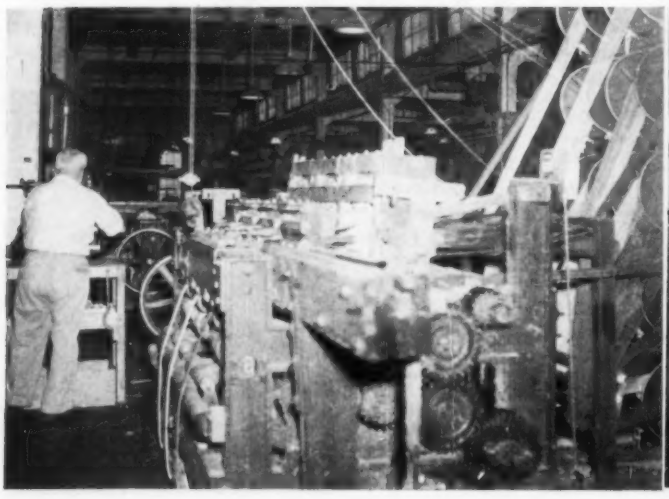
THE DUCK production of C. R. Daniels, Inc., is used by the company's Daniels, Md., plant for the manufacture of items which also require material and skills not normally found in a textile mill. Except for castings, this comparatively low spindle operation is equipped to design and assemble the various parts required, in its metal - working, wood - working, cutting and sewing, webbing, and finishing departments. The finished products made vary from a 10¢ pastry bag to 10,000-pound rolls of conveyor belting.

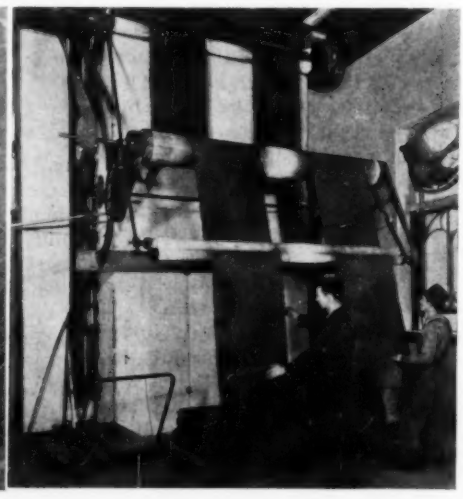
The administration of the organization is based, not on competing on any one item, but on being able to produce a full range of nonstandard products, starting with raw stock in the bale and other unfinished materials. This has proved to be a sound management policy because such a set-up can be quickly adjusted to new market conditions.

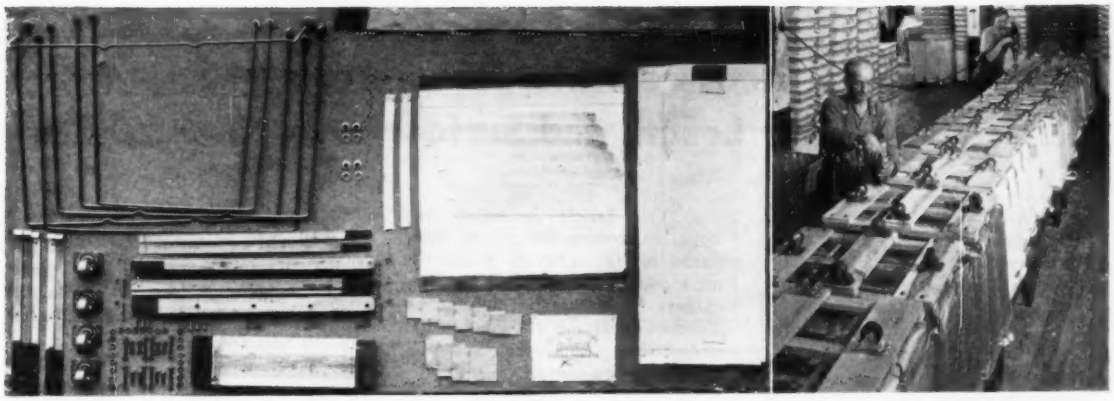
Tradition. Basic to mill thinking in the low spindle spinning mill is the theory that integration up to and including weaving is not profitable and competitive in times of depressed market conditions; when the market is good, spinning alone is all that is required to make money. This traditional approach has been bypassed at Daniels by going several steps further: they make the finished duck *plus* products therefrom, and supplement their own supply of the canvas with purchases on the outside.

This method is an outgrowth of the company's original function, which was strictly a sewing operation; integration in this case was

WEBBING is woven to supply reinforcement parts and beltings in various thicknesses and widths (left). Loom shown here is weaving three webbing widths at once. Canvas is dried (right) after having been treated with a wax-type waterproofing compound. These goods will be moved to the tarpaulin sewing department where a range of tarp sizes is assembled and packaged.







A CANVAS HAMPER requires a total of 179 parts (left). Duck, webbing, leather, wood and metal parts must be co-ordinated to order. Hamper assembly is completed (right) by attaching wooden base and wheels. Stacked hampers in background are prepared in advance of final assembly orders.

backwards when the demand for woven rather than sewn canvas belting dictated the acquisition of a weaving and spinning unit.

Manufacturing Structure. In order to avoid specialization to the point where it restricted sales, a series of manufacturing facilities was installed which has permitted flexibility of the end product with a limited variety of raw materials required. These departments, housed at the Daniels, Md., plant, are guided by a simple order and specification form which accompanies the product to its completion. Following is a brief description of each of the various departments:

1. Woodworking — Unseasoned lumber is shipped in to the mill where this department cures, cuts, and finishes it to order specification.

2. Metal Shop — This department is equipped for wire straightening, stamping, welding, and cutting and shaping of parts.

3. Webbing — A warping and weaving unit supplies the various widths and plies of tapes used primarily as reinforcements in canvas assembly.

4. Belting Department — This unit is set up to completely prepare stitched conveyor belts from duck. Facilities include folding equipment to prepare the duck in the proper width and thickness, heavy duty sewing machines mounted in tandem to sew rows of stitches through the belting, a stretching machine, and wet finish impregnator.

5. Waste Utilization—Waste is made into a lap and sewn into its cover on a multiple needle machine to produce quilted furniture pads and elevator pads.

6. Wet Finishing Department—Impregnating and dryer equipment for coated tarpaulins and other items with protective solutions.

7. Assembly Departments—This includes various production lines equipped to cut and sew duck and also to assemble items including wood and metal parts and duck.

Distribution. The sales department brings in about 20,000 separate orders a year. A good part of this number is sold through location of the product to fill a particular need of a customer rather than by showing a standard line.

As an example of this, a salesman visiting a southern tape mill worked out the required specifications for the canvas baskets used to contain tape as it weaves down from the looms; included with this was a suggestion to the mill that the baskets be moved to the floor below and the tape guided to them through vents in the flooring to avoid tangling at the loom.

Through this type of service, and with practically no limitations on the type of canvas-containing item that can be made at Daniels, the outlets for these products include widely diverse fields among which are all types of manufacturing, mining, armed forces, transportation, construction, hotels, laundries, hospitals, and agriculture.

ASSEMBLY of canvas parts into finished items is shown being done here in one of the various sewing departments.

A PRODUCTION line for the assembly of metal and canvas parts into Air Force airborne troop seats. Except for casted parts, all components were prepared in the mill.

Yarn Evenness Measurements Should Take Into Account Fiber Length and Surface Area

THERE ARE several evenness testing devices in operation at present. They serve their purpose equally well, even if they do not furnish the results in exactly the same manner. This is well known, and statisticians are on the job to find the common denominator.

This task would be comparatively easy if yarns tested were spun from the same staple lengths and the same thickness and weight. Since this is not the case, the work to find this common denominator, or a correlation of the subject, is vastly complicated.

Are Short Cottons More Irregular Than Long Cottons? It is common knowledge that short American cottons show a higher percentage of "irregularity" than Egyptian cottons spun into the same yarn number, even though both enjoy the same treatment from pickers to ring spinning frame. This is evidence that the physical structure of the fibers in question has something to do with the controversial results. Assuming that this is the case, we note at once that while computing the irregularity percentages (from recorded charts) the length of the cotton fiber is not included in the present cross sectional method of evenness interpretation.

Martindale's formula for the coefficient of variation is quite correct for fibers of one kind — same length, same thickness and weight. This coefficient deals with numbers of cross section fibers only.

If the number of fibers per cross section is designated by S, and the coefficient of variation by CV, we have, as commonly applied:

$$CV = \frac{100}{\sqrt{S}}, \text{ or}$$

$$CV \times \sqrt{S} = 100 = \text{Constant} \qquad (1)$$

This states that the coefficient of variation is inversely proportional to the square root of the number of cross section fibers. But this cannot possibly be accepted for our cotton yarns made of various staple lengths, mostly shorter than 1½" in length. Let us consider the following example:

A cotton yarn of average staple has 100 fibers per cross section. According to formula (1), the coefficient of

In this article American and Egyptian cotton yarns are compared as to variation registered on modern evenness testing machines. It is shown that shorter American cottons always register perceptibly higher irregularity than Egyptian yarns.

The "why" is explained in the article, and the conclusions can be used to advantage by quality control men — first, for better understanding of the subject; and second, for better comparison and discovery of hidden mechanical defects.

BY JOHN DUERST
EXCLUSIVE

variation should be 10%. If we now consider an artificial yarn with 100 filaments of several yards each, the formula likewise will give this yarn a 10% coefficient.

Would it not be logical to assume that the artificial yarn coefficient should be much smaller? In fact, it will be infinitesimal for an infinite length.

While the example is extreme, it points out the fact that fiber length and characteristics should be incorporated in some form in order to establish the coefficient of variation. The author's research to this end has furnished the following principle:

Coefficients of variation of fibrous strands are inversely proportional to the square root of the total fiber surface area present in a unit cylinder of mean fiber length.

New Formula Includes Fiber Area. If we designate total fiber area by A, the number of cross section fibers by S, we have:

$$CV = \frac{\text{Constant}}{\sqrt{A}}, \text{ or} \qquad (2)$$

$$CV \times \sqrt{A} = \text{Constant}$$

Proof by proportions:

	Yarn I	Yarn II
Number of Fibers	S	S_1
Area	A	A_1

$$A : A_1 = S : S_1$$

$$S : S_1 = (100/\sqrt{S_1})^2 : (100/\sqrt{S})^2$$

$$100/\sqrt{S_1} : 100/\sqrt{S} = \sqrt{A} : \sqrt{A_1}$$

$$CV_1 : CV = \sqrt{A} : \sqrt{A_1}$$

$$CV \times \sqrt{A} = CV_1 \times \sqrt{A_1} \text{ or}$$

$$CV \times \sqrt{A} = \text{Constant}$$

Formula (2) refers to the state of "Limit of Perfection." Actual coefficients of variation as obtained from chart readings are in all cases higher than basic coefficients at Limit of Perfection. The quotient of the two is called the "Degree of Perfection."

$$\frac{CV_a}{CV} = \text{Degree of Perfection}$$

Where CV_a is the coefficient commonly calculated from irregularity charts, and $CV = \dfrac{\text{Constant}}{\sqrt{A}}$

The Degree of Perfection becomes, therefore,

$$DP = \frac{CV_a}{\text{Constant}/\sqrt{A}}, \text{ or} \qquad (3)$$

$$DP = CV_a \sqrt{A}/\text{Constant}$$

All that remains is to enter the indicated values for $\sqrt{A}$.

A = Total fiber surface area in a yarn cylinder of L_m length.

L_m = Mean staple length.

s = Specific fiber surface area in cm^2 per milligram or cm^2/mg (Arealometer).

k = Length-weight conversion factor.

N = Yarn number.

We first find the weight in milligrams of a yarn cylinder of the length L_m:

$$Wt_{mg} = \frac{L_m}{N} k$$

Since one milligram of this cylinder has a specific fiber surface area of s cm^2, we obtain the total area of all fibers in the cylinder as follows:

$$A = k \frac{L_m \times s}{N}$$

$$\sqrt{A} = \sqrt{L_m(cm^2/mg)/N} \times \text{Constant} \qquad (4)$$

This value is introduced in formula (3):

$$DP = CV_a \times \sqrt{L_m(cm^2/mg)/N} \qquad (5)$$

The tabulated results in Table I are from irregularity charts traced on a Pacific tester. Similar tabulations and calculations from other type testers would undoubtedly show different Degrees of Perfection.

The measurement $\sqrt{A}$ is fairly constant for the "usual" cotton type bought and processed. We can therefore easily precalculate its value. This is done in Table II.

Use of the Formula. In order to establish "Degree of Perfection" indexes, multiply recorded irregularity percentages by $\sqrt{A}$. In practice, such indexes increase with greater bulk, but will, when properly averaged for certain groups of yarn numbers and hank counts, furnish a reliable base for future comparison.

If all yarns (within a fairly large group) are furnishing a "Degree of

TABLE I. Formula (5)

Yarn No.	Cotton	Mean Staple L_m	cm^2/mg	CV_δ (Pacific)	Degree of Perfection	DP Av.	Grader's Staple
48	Karnak	1.20	3.34	39%	11.2		
56	"	"	"	44%	11.8		
60	"	"	"	47%	12.1	11.6	1-11/32" Combed
30	"	"	"	30%	10.9		
44	"	"	"	40%	12.0		
28	Amer.	1.03	2.9	35%	11.4		
35	"	"	"	40%	11.7	11.8	1-1/8" Combed
44	"	"	"	47%	12.3		

TABLE II. Values of $\sqrt{A}$

Cotton	cm^2/mg	L_m	$\sqrt{A}$ 30s	$\sqrt{A}$ 44s
Type "E"	3.34	1.20	0.367	0.302
Type "A"	2.9	1.04	0.316	0.262

Perfection" of the same value, little confusion can arise, since, if some do vary higher, we know they could be improved mechanically.

Little extra work will be required in quality control procedures if DP formulas should be adopted.

It is hoped by the author that this article will help to shed some light on present conceptions in the field of variation. It is also expected that the surface theory will be helpful in the task of finding correlation ratios between the various types of testing machines, at least by clarification of one variable.

The Degree of Perfection obtained in the described manner will of course be a different value for each type of evenness tester. Correction factors between the different types can be employed.

Skin Diseases—Nation's Greatest Industrial Affliction

More and better cleanliness programs in plants only answer to control of occupational skin diseases, according to Dr. Louis Schwartz, author of recently published guide to "The Prevention of Occupational Skin Diseases."

WOOL DYES were responsible for this dermatitis. Proper washing with soap and water is the simple and effective preventive, says Dr. Schwartz in his new booklet on skin diseases.

"DISEASES of the skin are taking a far larger toll of the nation's industrial output, in terms of lost productive time and compensation payments, than all other occupational diseases combined. The cost to industry of the average industrial worker hit with a skin disease is: 10 weeks off the job; $100 in compensation payments: and $90 for medical care; totalling far more than $100 million annually."

These statements were made by Dr. Louis Schwartz, industrial dermatologist and former medical director of the U. S. Public Health Service, at a press conference held in New York City recently to announce a new industrial guide booklet published by the Association of American Soap & Glycerine Producers, Inc., titled "The Prevention of Occupational Skin Diseases."

Recent statistics compiled from a pilot survey by the Division of Occupational Health of the Public Health Service reveal that industrial dermatoses annually account for 75.3% of all occupational diseases.

"The menace of occupational skin diseases to the health and life of America's 60,000,000 or more workers can be radically reduced by the inauguration of adequate plant cleanliness programs, and most skin diseases can be entirely avoided by proper washing procedures, showering, and wearing of clean and suitable protective clothing," Dr. Schwartz asserted.

Preventive measures can reduce the great toll taken by skin diseases in all types of industry, Dr. Schwartz said, revealing that incidence of industrial dermatitis ranges from a high of 7.5% in the synthetic resin manufacturing industry, to a low of 0.4% for automobile manufacture. In the fabric dyeing segment of the textile industry, the incidence is 2.0%.

The new booklet also shows the

major causes of occupational dermatitis. Highest on the list are cases reported due to petroleum products and greases (18.8%), while the fewest number of cases (0.2%) result from vegetable oils, fats, and waxes.

Stressing the vital need to safeguard industrial operatives from actual or potential skin irritants in advance, the booklet presents a brief study of the anatomy and physiology of the skin, and lists causes of occupational skin diseases under five main headings.

Then Dr. Schwartz outlines the most effective measures for preventing dermatoses on the job. Chief among these is personal cleanliness, without which any program of plant protection must fail, according to the doctor.

An effective program of personal hygiene will provide for quick removal from the skin of any irritants unavoidably contacted at work. Such a program should:

1. Provide running hot and cold water, a proper industrial cleanser, and towels no farther than 100 feet from the place of work; and enough showers so no operative need wait more than a few minutes.
2. Educate workers thoroughly in the importance of personal cleanliness, through posters, safety meetings, and campaigns.
3. Allow for inspection of operatives' skin at periodic intervals.
4. Provide the skin cleaner best fitted to combat the irritants involved in a particular type of industry.

Beyond personal cleanliness, writes Dr. Schwartz, "'environmental cleanliness'—often called 'good housekeeping'—is essential in any industrial plant." Good industrial housekeeping reaches into many corners, and includes proper plant ventilation and design in order to reduce initial contact with irritants to a minimum, and the provision of protective clothing where warranted. Of considerable help, too, are vanishing, water-repellent or solvent-repellent ointments and creams, and special lotions to prevent excessive drying and chapping of the skin.

Individual, free sample copies of the booklet may be obtained direct from the Association. Bulk quantities will be supplied at cost and will be obtainable through member companies. Further information may be obtained from the Cleanliness Bureau, Association of American Soap & Glycerine Producers, Inc., 295 Madison Avenue, New York 17, New York.

Machinery Research Progress Report

An Integrated System for Cleaning Cotton at Textile Mills

BY RALPH A. RUSCA*
Southern Regional Research Laboratory
New Orleans, La.

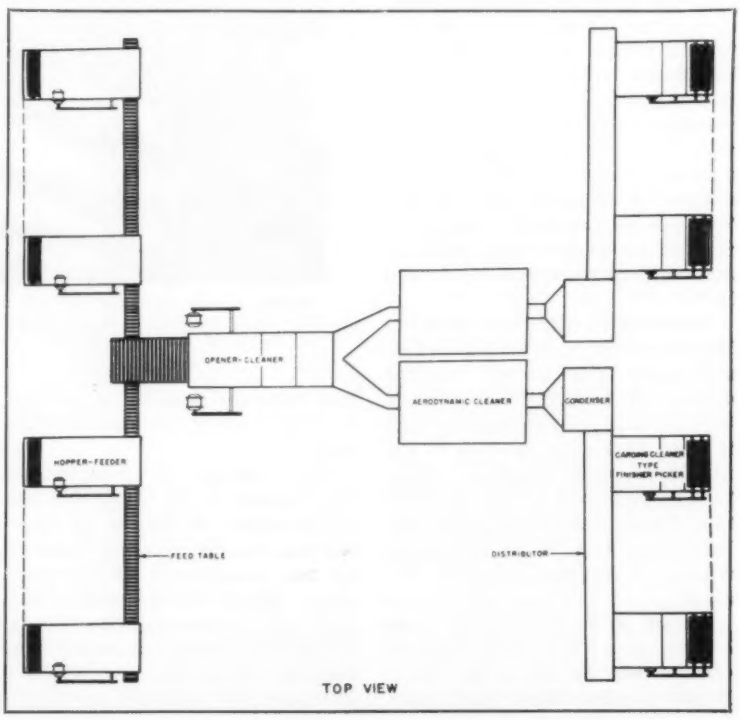
THE PROGRAM of the Southern Regional Research Laboratory is planned to systematically and scientifically develop a system for cleaning cotton at the mills with the function of each machine integrated and synchronized with every other machine. By this approach it is believed that more effective cleaning can be achieved with considerably less equipment.

The proposed SRRL System is predicated on developing three distinct types of machines. Following the customary blending feeders, the initial cleaning machine in the opening room will be an Opener-Cleaner capable of removing 30 to 40% of the trash in the cotton at 3,000 pounds per hour.

The second machine will be an Aerodynamic Cleaner that uses combined mechanical action and air impingement and should

*From paper presented by Mr. Rusca on October 28, 1955, before the Southeastern Section, Textile Division, American Society of Mechanical Engineers.

OPENING-PICKING LINE using the three types of machines which are under development at the Southern Regional Research Laboratory.



achieve 20 to 30% cleaning of the cotton from the Opener-Cleaner, at 1,500 pounds per hour. It is specifically designed to clean cotton of the density and tuft size delivered by the preceding Opener-Cleaner.

The Aerodynamic Cleaner uses the combined action of mechanical and pneumatic forces. It is being developed with the criteria that the machine must not interfere with the normal movement of cotton or air in conventional cotton conveying ducts. A tentative design has been conceived that uses slotted, perforated plate in conjunction with a series of air impingement nozzles which create differential pressures between an inner and outer chamber. A half-size unit is being experimentally tried under laboratory conditions.

The opening line is therefore made up of two high-production machines engineered to function on different principles in order to avoid the fiber damage frequently caused by repetitive actions.

The third type of machine is the Carding Cleaner described at the Cotton Research Clinic in Pinehurst, N. C., February 18, 1955 [see TEXTILE INDUSTRIES for April, 1955, page 141]. This cleaner [similar to a downstroke buckley-type cleaner but with the customary beater replaced by a licker-in type carding cylinder] is intended to replace a major part of the picker line rather than to serve as an independent machine in the opening room. The Carding Cleaner used as the finisher picker should remove 50 to 60% of the remaining trash at 400 pounds per hour production.

Research is being conducted to perfect a system comprised of one Opener-Cleaner, two Aerodynamic Cleaners in parallel, and eight Carding-Cleaner type finisher pickers in parallel with the necessary condensers and cotton distribution means [see accompanying illustration]. If successful, the system would be capable of removing 75 to 90% of the trash from about 100,000 pounds of cotton per 40-hour shift.

The component machines of the SRRL system are in various stages of development: An industrial size Opener-Cleaner is being tested but is obviously not ready for mill applications; a pilot size Aerodynamic Cleaner has been constructed but not tested; a Carding Cleaner is being installed in a picker for laboratory evaluation.

Approximately two years will be required to complete and thoroughly evaluate these machines on the wide range of American cottons consumed by the textile industry. Every effort is being made to insure that this research will be of value to the entire cotton industry.

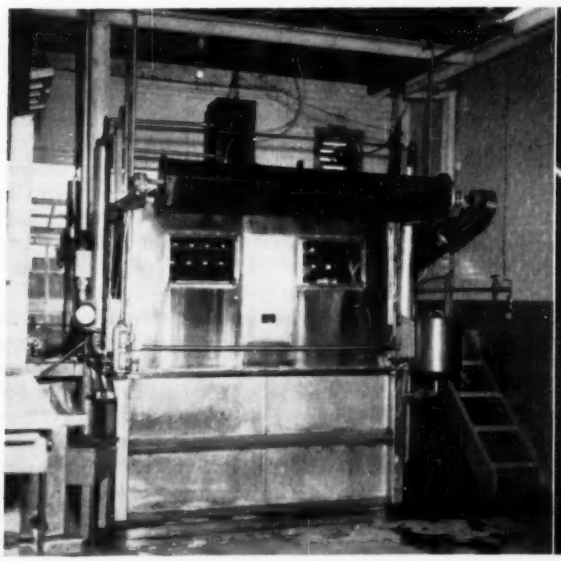
Dispersion Pipe and Baffle For Uniform Wool Piece Dyeing

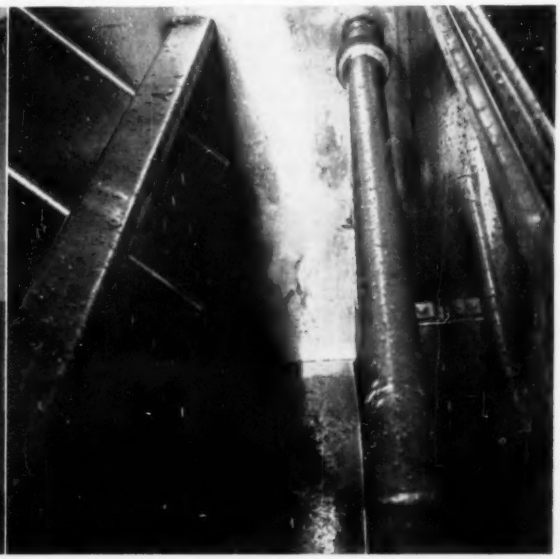
STAFF PREPARED EXCLUSIVE

SEVERAL features included in piece dyeing equipment installed at Kenwood Mills Limited, Arnprior, Ontario, Canada, have minimized mechanical and human inconsistencies through their positive control.

Built by Gosselin Machine, Ltd., on a custom basis, the stainless units are equipped with a dye-dispersion pipe and an 18-inch

DYE LIQUOR FLOW IS CONFINED to 1¾ gallons per minute by the dye dispersion pipe shown in right photo below. Baffle plate edge is visible at left of pipe. Over-all view of machine is at left.

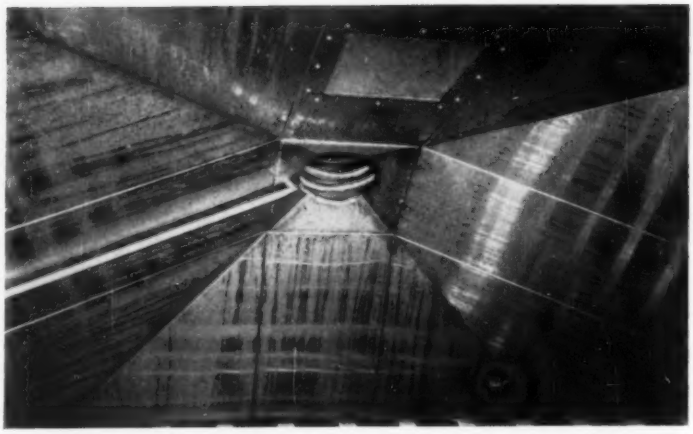




wide baffle plate.

When dye and acid additions are made, the concentrated ingredients must travel down and be diluted through 300 gallons of liquor before hitting the woolen material being dyed. Additions so made through pipe openings, which confine flow to 1¾ gallons per minute, are thereby prevented from causing uneven dyeing.

Also included in the machine is a steam condensing hood with a water-cooled condenser. The dye bath contains a closed coil heating unit which is set to bring the temperature from 120 to 200 F in 40 minutes, and a P.I.V. reel drive.



STEAM CONDENSING HOOD has a water-cooled condenser.

The New Monopolies

BY RINGGOLD ARDEN
EXCLUSIVE

SOME recent occurrences have emphasized the fact that over the past few years we have been developing in this country an entirely new kind of monopoly. For many years the Federal Department of Justice has been vigorously prosecuting various anti-trust suits, some logical and many ridiculous.

Members of the Congress have expressed grave concern about the great number of mergers which have taken place, or which have been proposed, and there has been a very general air of hostility throughout the government to anything smacking of monopoly or combinations in restraint of trade, except where the monopoly and restraint of trade was exercised by a labor union.

Whereas, however, the entire majesty of the government will move with crushing force against two or three corporation presidents who directly seek to establish a monopoly and exercise restraint of trade, these executives can do as they wish by setting in motion a very simple business reaction using the labor racketeer as a catalyst.

The purpose of any monopoly is to eliminate competition, and the labor racketeer is the great eliminator of competition, so that all companies engaged in the same type of manufacture are required to pay the same wages, institute the same amount of featherbedding, and in general operate under conditions which would have got the executives of the various companies in plenty of trouble if they had undertaken to impose these conditions themselves by mutual agreement.

Obedient to the old political doctrine that if you can't beat them, join them, it seems that a large number of American firms, practically controlling whole industries, have decided that if you can't lick the labor rackets, you might as well use them to your own advantage.

One of the most essential features of true competition is the exercise of skill and ingenuity in management. Many a business has forged ahead from a little thing to a big one because the management was capable and ingenious, and got the most from the available labor force, while frequently making the work actually easier. With industry-wide control of wages and working conditions, there is no room left for the exercise of such ingenuity, and the labor union has therefore put into effect for the manufacturers the soothing system employed by the European cartels, which, through the collusion of managements, eliminated these irritating competitive features.

A manufacturer is, in general, not particularly concerned with the size of the wage he pays, except to see that it is in line with his competitors' wages. For instance, the automobile industry is now paying about $2.30 on hour for machinists who could have been hired for about 23 cents an hour 45 years ago, before Ford instituted his sensational $5 minimum.

What the manufacturer is concerned about is a disparity between his manufacturing costs and those of his competitors, and it is this concern which has done more to benefit the American buying public than almost anything else. Competition between manufacturers for better and more efficient processes, and new and more effective machinery, has continually lowered the cost of making things when calculated on a man-hour basis.

The great difference between the tremendous industrial advances in this country and in Europe was this very fact, that in European industries the cartels equalized manufacturing conditions so that there was little incentive for the ingenious producer to exercise his ingenuity. The labor unions are performing this useful function in the

United States.

Quite recently one of the big labor unions "negotiated" an agreement with the two big can companies with respect to wages and various fringe benefits. Since this so-called negotiation was carried out with a knife at the throat of each company, it was a simple matter to agree to what the negotiators wanted and let the general public pay the bill, as usual.

In the case of tin cans, everybody in the United States must contribute his bit to the increased cost of can making, but since there is monopoly control of the labor cost of manufacturing cans, neither one of the big can companies has to worry about tough price competition.

The same thing has happened in the automobile and steel industries, and is of course an old story with the coal miners. The public, naturally, pays the cost of each boost in wages for people who are already overpaid with respect to the average earnings of the general public.

The labor racketeers have therefore apparently found a means of completely circumventing the anti-monopoly laws. Since labor unions are sacrosanct organizations, which can not be held accountable for very much of anything normally illegal, it is a very simple matter for the executives of an industry, where a few companies completely dominate it, to cooperate with the labor racketeers instead of fighting them.

It is not hard to think of any number of huge industries which are completely dominated by from two to five or six companies. True competition between these companies is absolutely forbidden when uniform agreements as to wages and working conditions are made effective in all of them.

The textile industry has moved from the North to the South to get away from the labor racketeers, but a great many big non-textile companies which are operating southern branches are forced to unionize their employees whether the employees want it or not, and to equip the plant with the same type of featherbed used in the parent organization.

A great deal has been said and written about the disparity in wages between textile mills in the North and the South, but every time somebody will take the trouble to figure the purchasing power of the southern mill operative's wages against the purchasing power of the man in the North getting perhaps more dollars each week, it appears that in most cases the southerner with his fewer dollars is better off, because of their greater purchasing power.

Quite recently in a discussion of this situation with a northern manufacturer, he said that in his city, house rents ran about $20 per room per month, so that to rent a four-room apartment or cottage would cost about $75 or $80 a month. While rents have risen considerably in the South in the mill villages, we believe that very few mills are charging over $15 a month for a four-room house, and this generally includes free water.

Assuming that a mill operative will work about 175 hours a month, the man paying $75 a month for a house will have to make about 35 cents an hour more than the man paying $15, simply to take care of his house rent. Furthermore, it is a perfectly obvious fact that a high wage area is a high cost area, and where wages are generally lower in the southern communities the cost of practically everything is correspondingly lower.

The labor unions, however, do not take this into consideration, but insist that a manufacturing plant in a low cost area ought to pay the same wages as a plant in a high cost area. This of course soon has the effect of making the low cost area one of high cost, and that tends to drive industries which are still competitive out of such an area.

A great many textile plants have been affected in this manner. The complete monopoly control of labor in some industries has pushed wages to such an unreasonable level that industries which lack that monopoly control simply can not hire help in such an area.

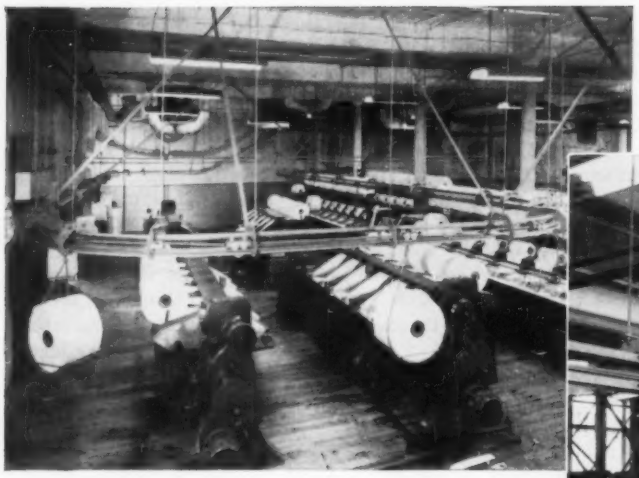
It would seem as if collusion between business men and labor racketeers to establish monopolies is perfectly legal. The business men can not conspire with each other, but they can conspire in concert with the labor racketeer. The labor racketeer then maintains throughout the industry the same sort of iron control of competition that a cartel would maintain if allowed to. Many persons think that this is a highly beneficial state of affairs, although they would be horror struck at the suggestion that the heads of businesses be allowed to do these things of their own accord without having to bring in an intermediary to make everything legal.

A number of our big industries have had a splendid opportunity during the past year to take a firm stand against perpetual inflation as insisted upon by the labor unions, but nobody offered to put up any fight, and everything was settled very amicably with the public paying the bill. We seem therefore to have a new type of monopoly control of industry.

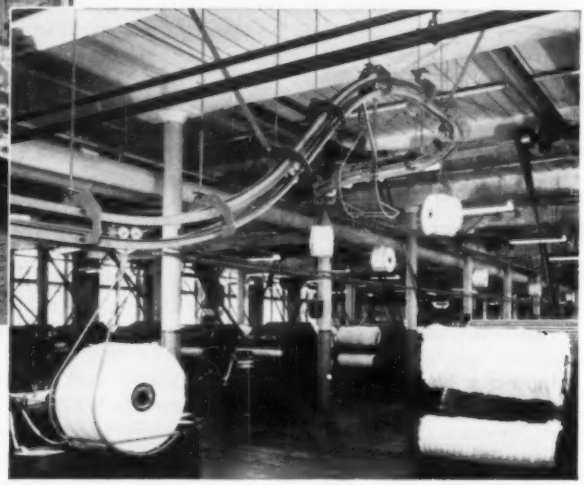
In the old days, the leading members of a cartel would gang up on any recalcitrant manufacturer to bleed him to death with price cuts until he agreed to play ball with the rest of the cartel. The modern cartel can operate very smoothly and effectively through the labor union, which imposes iron discipline on all of the elements of an industry. The control of the labor racketeer is absolute. He can call a strike any time, for any reason or for no reason, and can wreck any business that incurs his displeasure.

The labor racketeer therefore exercises even more complete control over business than the cartels ever did, because even under the cartel system, there were independent manufacturers who were able enough and smart enough and energetic enough to defy the cartels. You can't defy an omnipotent labor racket. If it controls the actions of the workmen in your plant, it can destroy the plant, and it is not unusual for such things to happen.

Since there seems to be no movement in Congress to repeal this immunity of the labor racketeers for actions which are crimes when taken by anybody but labor racketeers, we seem to be drifting comfortably into a period of complete monopoly control of major



Sliver laps are transferred continuously between the combers and the lappers on a Landahl Chainless Conveyor.



Complicated curves are no problem with Landahl Chainless Conveyor. The light track sections are easily fabricated into short radius turns in any direction.

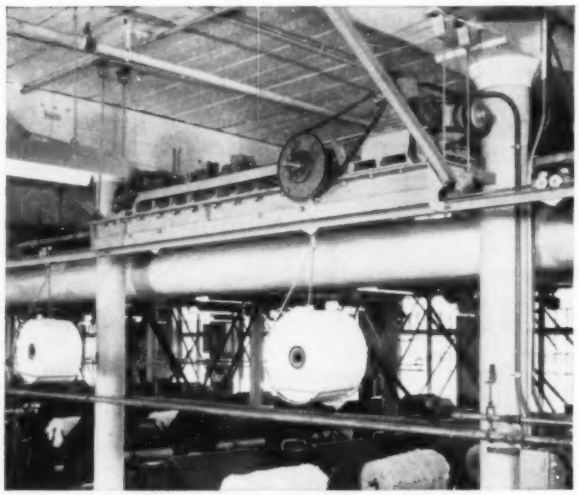
new CONVEYOR SOLVES OLD HANDLING HEADACHE

The unique patented design of the Landahl Chainless Conveyor offers many distinct advantages not found in any other conveyor.

Basically, the conveyor is a series of solid steel rods connected by ball-and-socket type universal joints housed in compact trolley units. The trolley units move freely on ball-bearing steel wheels, over tracks formed by parallel steel angles supported from above by track plates.

These design advantages make the Landahl Chainless Overhead Conveyor lower in initial cost, more flexible, simpler to install, safer to operate and easier to maintain than any other system.

Write for Bulletin G-100—showing many other advantages of Landahl Chainless Overhead Conveyors.



Caterpillar drive brings dogs in pairs mounted on endless roller chain down to engage the Landahl trolley housings for forward propulsion.

LANDAHL **Chainless** CONVEYORS

Photos courtesy F. W. Poe Mfg. Co., Greenville, S. C.

The LANDAHL CONVEYOR CO.

13106 Athens Ave., CLEVELAND 7, OHIO

A SUBSIDIARY OF THE AMERICAN MONORAIL COMPANY

industries by the rackets.

The textile industry has seemed to offer one exception to this movement. Nobody has yet been able to build up an aggregate of power in the textile industry comparable to the aggregates in the steel, automotive, and electric industries, but maybe some day somebody will.

The northern textile industry was dominated by one labor union, which was strong enough to pull 70,000 people off of their jobs in one strike. Since these 70,000 people were bucking free competition in the South, they were simply pushing their employers into bankruptcy, but perhaps the happy day will come when the racketeers will control labor in the South as well as in the North, and can put into effect the annual 10 per cent wage increase. Then it won't be necessary for people to worry about the future and save money against future emergencies. The saved-up money will be worth so little by the time you need it that it will not be worth saving.

The old-fashioned monopoly had at least one virtue, in that it tended to stabilize business conditions. Unfortunately, it generally stabilized them to the point of stagnation. The new-style monopoly is dedicated to perpetual inflation, so that a working man can quit worrying about such old-fashioned, obsolete things as thrift and prudence, and can hock his future to buy things he can't afford, secure in the knowledge that his union will get him a wage increase which will enable him to pay for these things that he knew he couldn't afford when he bought them. This is what is known as a dynamic economy.

The New Deal racket of robbing the thrifty and prudent to take care of the shiftless and improvident has now been streamlined and standardized by the operation of this new-style monopoly, which aims not merely to control prices, but constantly to raise them.

Mill Tests of Machine-Picked vs. Hand-Picked Pima S-1 Cotton

BY GEORGE W. PFEIFFENBERGER
Cotton Technologist
National Cotton Council of America

EXCLUSIVE

ECONOMIC STUDIES of the productions of extra-long staple cotton indicate that two of the major factors affecting costs are harvesting and ginning. The data indicate that substantial savings can be made through machine picking, provided field losses and the quality of the cotton are not affected to such an extent that the differences would wipe out any of the harvesting advantages.

In order to obtain some preliminary guide posts on the subject of harvesting and ginning of Pima S-1 cotton, a request was made to the National Cotton Council in the summer of 1954 to arrange for commercial spinning tests on machine- versus hand-picked bales of the 1954 crop.

The project was planned with various Arizona Pima S-1 growers, the Arizona Planting Seed Association, the Arizona Cotton Producers Association, the Shaw Cotton Company (Phoenix), and with several mills engaged in the manufacture of yarns and fabrics using Egyptian Karnak, Pima 32, or the new Pima S-1. The United States Cotton Ginning Laboratory at Mesilla Park, New Mexico; and the U.S.D.A. Spinning Laboratory at Clemson, South Carolina, also cooperated in the program. Cottons were secured through the assistance of the above organizations and from the Borg Farm, Maricopa, Arizona; and the J. G. Boswell Farm, Litchfield Park, Arizona. All machine picking was done with smooth spindle-type pickers.

Harvesting and Ginning. Three distinct sets or pairs of machine- and hand-picked cottons were secured, as follows:

1. One bale each of machine- and hand-picked cotton from the same field, both ginned under identical conditions at the same commercial gin, and with no effort to give special attention to either one. In other words, it was a field and gin run comparison, producing Grade 3 for hand-picked, and Grade 4 for machine-picked, both bales classing 1-7/16″.

2. In the second set, two bales each of machine- and hand-picked cottons were selected from the same general production area and ginned at the same gin, but with the selection being made on the basis of the Smith-Doxey green card classification. Two bales each of hand-picked Grade 2 and machine-picked Grade 3—all bales being 1-7/16″ staple — were selected.

3. The third pair of bales representing machine- versus hand-picking were harvested from the same field, but the seed cotton was shipped to the U. S. Cotton Ginning Laboratory at Mesilla Park, New Mexico, for special ginning tests. These were planned so that the same grade might be produced from both methods of harvesting. Ginning tests on small pilot lots were made before the large lots were ginned. The ginning test resulted in both bales being graded as Grade 2, 1-7/16″ staple.

Results of the various tests, and a brief discussion of them follow. Since the chief purpose of these experiments was to compare hand- versus machine-picking, the discussion will be chiefly on these comparisons. The control cottons are shown as a secondary study of foreign growths against Pima S-1.

Mill A. This mill received the pair of field-run, commercially-ginned bales. Table 1 gives all of the information obtained in this test. The machine-picked cotton

FACTS

about

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New Departure originated self-sealed ball bearings to eliminate the most common causes of bearing wear and failure—such as abrasive dirt and improper lubrication. Since then, more than 300,000,000 New Departure sealed bearings have been produced in various types to fit the specific requirements of industry. Seals are available to keep out foreign matter, ranging from dust and dirt to corrosive gases . . . to retain lubricants, varying from heavy grease to light oil . . . to provide the protection that assures longest life.

New Departure's latest advance, Sentri-Seal, embodies exclusive features which importantly improve both bearing performance and range of application. Because of its design, Sentri-Seal provides controlled, highly efficient sealing with low torque and is not materially influenced by axial movement due to bearing end play within prescribed tolerances.

Sealed ball bearings offer the textile industry many advantages. They prevent leakage of lubricant and contamination of goods being processed. Sealed ball bearings require little or no maintenance and assure trouble-free operation for extremely long periods.

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graded 4's, and the hand-picked 3's. Both bales were called 1-7/16" staple.

Pressley fiber strength tests showed no significant difference between them. Micronaire tests were almost identical. Shirley Analyzer showed 2% more waste in the machine-picked bale.

In the manufacturing tests, total waste through the cards was greater for the machine-picked Pima, as would be expected. The manufacturer states, however, that he does not consider the difference significant. A breakdown of the wastes indicates that most of the difference in the total waste occurred in the opener and picker rooms. The carding waste was almost equal for both bales, and since card waste is composed primarily of fiber, this is evidence that the two cottons were about equal in their degree of fiber wastiness.

No nep counts were given.

No difference is shown in per cent of noils at combing.

This mill spun five singles yarns ranging from 8's to 80's. There was no consistent difference between machine- and hand-picked yarn strengths. The plied yarns are tested by variable methods, but the paired comparisons followed approximately the same pattern as the singles.

There were no significant differences in yarn appearance between the machine- and hand-picked bales.

This mill reported on processing tests as follows: "Some lap-ups at drawing, but probably could be controlled by settings and humidity. Ends down on spinning compared very well with Egyptian spinning." Since no special comment was made between hand- and machine-picked cottons, it is presumed they were considered about equal.

TABLE 1—Mill A

	Pima S 1		
	Hand-Picked	Machine-Picked	Control Karnak
Fiber Tests			
Grade	3	4	FG-Ex
Staple	1-7/16"	1-7/16"	1-7/16"
Micronaire	4.00	4.07	3.75
Pressley	101.0	100.4	100.0
Shirley Analyzer (%)	3.9	5.9	—
Manufacturing Tests			
Opener and picker waste (%)	3.88	4.58	2.54
Carding waste (%)	5.55	6.00	5.84
Total waste (%)	9.43	10.58	8.38
Card production (lb/hr)	3.5-8.0	3.5-8.0	3.5-8.0
Neps	—	—	—
Comber Noils (%)	15-20	15-20	15-20
Grand total waste (%)	24.43-29.43	25.58-30.58	23.38-28.38
Single yarn number (nominal)	8	8	8
	22	22	22
	35	35	35
	53	53	53
	80	80	80
Yarn appearance			
8/1's	B	B	A—
8/6's	A—	A—	A—
22/1's	B+	B+	A—
22/4's	B+	B+	A—
35/1's	B+	A—	A—
35/3's	B+	B+	B+
53/1's	B	B	A—
53/4's	B+	B	B+
80/1's	B	B	A—
80/3's	B+	B+	B+
Break factor			
8's	3874	3938	3756
22's	3520	3410	3062
35's	3205	3380	2952
53's	3046	2911	2874
80's	2570	2689	2740
Ply yarn break factor			
8/6	227	233	237
22/4	2349	2394	2304
35/3	1698	1700	1610
53/4	2362	2315	2327
80/3	1601	1648	1650

Remarks: Some lap-ups at drawing, but probably could be controlled by settings and humidity. Ends down in spinning compared very well with Egyptian spinning.

Mill B. Mill B received two bales each of hand- and machine-picked cotton selected from the Smith-Doxey class for Grades 2 and 3. The control cotton was Peruvian Pima, Grade 1, but with the staple length 1/16" longer than the Pima S-1.

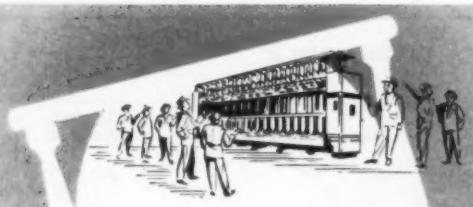
Table 2 illustrates the results. Micronaire fineness was slightly, but not significantly coarser for the hand-picked than the machine-picked.

Pressley strengths were almost exactly the same.

In manufacturing, total waste was slightly higher for the machine-picked. No difference in comber noils removed was noted. Most of the difference in wastes occurred at the picker; since the card wastes were substantially the same for both tests, indicating equal fiber waste. Cotton was carded at the rate of five pounds per hour, and the nep counts were identical for both tests.

The hand-picked cotton was spun into warp yarns of 100's singles, and the machine-picked into filling yarns of 87's singles. No direct comparison can be made between the machine-picked and hand-picked cottons because of a difference in yarn numbers, but they are both well above that of Peruvian Pima control cotton, and highly satisfactory. The machine-picked yarn graded ⅓ of a grade higher than the hand-picked.

Ends down for the machine-picked yarn were 60, as compared to 43 for the hand-picked, which may or may not be significant,



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Gwaltney Spinning Frames have demonstrated beyond any doubt their ability to produce yarns that are stronger, far more even, and of higher grade than the same count yarn produced from the same stock with conventional spinning — and this improved quality has been produced at considerably lower operating costs and resultant higher profit.

The superiority of Gwaltney Spinning is achieved through a combination of many developments including

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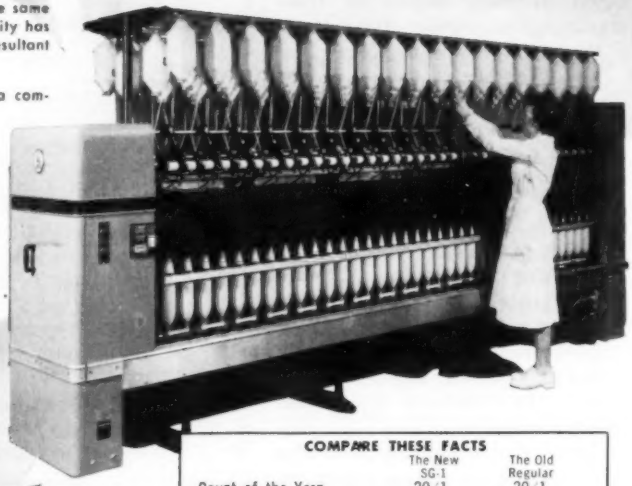
Plus, many other special features

Saco-Lowell Gwaltney Spinning Frames can be successfully used for processing all of the current commercially used fibres: cotton, wool, synthetics and blends.

They can be equipped with Shaw Drafting element, Duo Roth, Standard Gwaltney, SS-4G or Z-6.

The purchase of Gwaltney Spinning is an "investment in progress" that pays off in higher profits and top quality.

A Saco-Lowell engineer will be glad to give you full details, or, arrange a demonstration.



COMPARE THESE FACTS	The New SG-1	The Old Regular
Count of the Yarn	20/1	20/1
Length of Yarn Traverse	10.62"	5.88"
Ring Size	3.0"	2.0"
Weight of Yarn on Bobbin	12 oz.	3.2 oz.
Yards of Yarn on Bobbin	12,600	3,360
Unwinding Time at 500 yds./M	25.2 Min.	6.72 Min.
Bobbins creeled per Spindle per Hr. at Winder	2.39	8.93
Spindle Speed	7,920	7,920
Traveler Speed	6,220 Ft./M	4,146 Ft./M
Speed of 1" Front Roll	170 R.P.M.	170 R.P.M.
100% Production per Spindle per Hr.	.053 Lbs.	.053 Lbs.
Turns per Inch of Twist	14.9	14.9
Doffing Cycle	14.73 Hrs.	4.14 Hrs.
Estimated Efficiency	96.1	91.2
Net Production per Spindle Per Hr.	.0509 Lbs.	.0483 Lbs.
Increase for SG-1	5.4%	.....

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since different numbers were being spun and no information on the conditions is available. In both cases, however, the Pima cotton spun with lower ends down than the comparable Peruvian yarn, which again would indicate better performance than this mill's regular cotton, and therefore presumably satisfactory.

Plied yarns followed the same strength pattern as the singles, in that both the Pima S-1 tests were definitely stronger than the control. The extra yarn strength of the Pima S-1 cotton was also reflected in the strength of the grey goods, since the S-1 fabrics were decidedly stronger than the control.

Comments on these tests are as follows: "This cotton spun extremely well. We had more shed on the Pima cotton due to shorter staple length."

TABLE 2—Mill B

	Pima S-1		
	Hand-Picked	Machine-Picked	Control Karnak
Fiber Tests			
Grade	No. 2	No. 3	Peruvian No. 1
Staple	1-1/2"	1-1/2"	1-9/16"
Micronaire	3.90	3.50	3.50
Pressley	98	97	93
Manufacturing Tests			
Opener and picker waste (%)	1.64	1.93	1.06
Carding waste (%)	6.30	6.96	6.32
Total waste (%)	7.94	8.89	7.38
Card production (lb/hr)	5	5	5
Neps	15	15	15
Comber noils (%)	15	15	15
Grand total waste (%)	22.94	23.89	22.38
Singles yarn number (nominal)	100	87	100 87
Yarn appearance	B —	B+ —	B B—
Break factor	2513	2736	1966 2223
Ends down	43 (100's W) —	60 (87's F) —	75 (100's W) 65 (87's F)
Plied yarn strength			
100/2/ZS	68	—	56
87/2/ZZ	—	84	62
Fabric Tests			
2x2 Broadcloth			
Grab method:			
Warp-wise	135		115
Filling-wise		73	62

Remarks: This cotton spun extremely well. We had more shed on sample due to shorter staple length. No reworkable waste was run through in Z (control) stock checked through cards, but all checks made on control cotton after carding contained reworkable waste which would tend to hurt running quality of S-1 cotton somewhat on a production basis.

Mill C. This mill received the two bales of cotton especially ginned to obtain equal grades and staples. These turned out Grade 2 and 1-7/16" staple for both bales. Smith-Doxey and mill classers, however, found small dark specks in the hand-picked, not present in the machine-picked, and both expressed the opinion the machine-picked was a little superior. Table 3 gives the results.

Fibrograph tests show the hand-picked cotton to be slightly longer and more uniform than the machine-picked. Fineness by Micronaire was identical for both harvesting methods. The fiber strength by Pressley tests was also practically identical for both cottons.

Total wastes showed the machine-picked cotton had about 1.5% less waste than the hand-picked. This advantage to machine picking existed in all processes, including carding, which is some indication that the hand-picked bale was a little more wasty, fiber-wise, than the machine-picked. This supports the classers' opinions above.

There was no difference between the hand- and machine-picked bales in comber waste.

The cottons were carded at four pounds per hour and no significant difference in neps was observed between the two samples.

Both cottons were spun into 97.25's yarns with no significant difference in yarn strength between the hand-picked versus machine-picked cottons. Yarn appearance was identical for both tests.

Ends down per 1,000 spindle hours of spinning were slightly higher for the hand-picked, but this is not considered a significant difference.

There was no difference in strength between the machine- and hand-picked cabled yarns.

Comments by the technical people on this test are as follows: "Tests ran better than regular Karnak. End breakage was better than our regular production. Strength in the yarn was better than regular, while grey thread was slightly lower than regular. No difficulties were encountered in the finishing of this yarn. Very little difference in the appearance of the test yarns from the control yarn."

Mill D. Mill D represents tests made in the U.S.D.A. Spinning Laboratory at Clemson, South Carolina, and these tests were performed on small portions of the same bales as used by Mill C.

Micronaire and Pressley tests were identical for the machine- and hand-picked cottons.

As in the case of Mill C, these tests also showed a slight reduction in total manufacturing wastes for the machine-picked cotton.

At a production of 3½ pounds

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TABLE 3—Mill C

	Pima S-1		
	Hand-Picked	Machine-Picked	Control Karnak
Fiber Tests			
Grade	2	2	50% Ex-1/4 50% FG-1/4
Staple	1-7/16"	1-7/16"	1-7/16"
Micronaire	3.1	3.1	3.2
Pressley	103	101	104
Shirley Analyzer	4.5	3.5	—
Manufacturing Tests			
Opener and picker waste (%)	2.44	1.41	2.77
Carding waste (%)	6.30	5.80	8.80
Total waste (%)	8.74	7.21	11.57
Card production (lb/hr)	4.07	4.07	4.07
Neps	22	22	24
Comber noils (%)	16.40	16.35	18.23
Grand total waste (%)	25.14	23.56	29.80
Singles yarn number (nominal)	97.25	97.25	97.25
Singles yarn number (actual)	97.50	97.38	96.10
Yarn appearance	B+	B+	B+
Break factor	2742	2532	2198
Ends down	47	41	47
Cabled yarn strength (100/2/6)	2.24	2.24	2.25
Dyeability	No apparent difference in cottons.		

Remarks: Ran better than regular Karnak.
End breakage better than regular production.
Strength in yarn better than regular, grey thread slightly lower than regular.
Finishing: No difficulties encountered in processing this yarn. Very little difference in appearance.

TABLE 4—Mill D

	Pima S-1	
Fiber Tests	Hand-Picked	Machine-picked
Grade	2	2
Staple	1-7/16"	1-7/16"
Micronaire	4.0	4.0
Pressley	99	98
Manufacturing Tests		
Opener and picker waste	—	—
Carding waste	—	—
Total waste (%)	11.2	10.8
Card production (lb/hr)	3.5	3.5
Neps	8	5
Comber noils	15.1	15.1
Grand total waste (%)	26.3	25.9
Single yarn number (nominal)	50	50
	80	80
Yarn appearance (50's)	B+	B+
(80's)	B	B
Break factor	3344	3372

Ginning Setup:

1. Tower dryer without heat.
2. Six-cylinder screen cleaner.
3. Second tower dryer without heat.
4. Seven-cylinder grid bar cleaner.
5. Extractor-feeder over gin stand.
6. Roller gin.
7. Conveyor belt.
8. Pneumatic lint cleaner.

per hour, the machine-picked cotton also showed less neps.

The comber wastes removed were identical for both tests.

Both tests were spun into 50's and 80's combed yarns with no significant difference in yarn break factor or yarn appearance between the hand- and machine-picked cottons.

Pima S-1 vs. Foreign Growths. No detailed discussion is necessary in comparing the Pima S-1 cottons with the several mill control cottons. It is sufficient to say that, in practically all cases, the yarn strengths were substantially higher for the Pima S-1 than for the foreign growths. Yarn appearance was practically the same between the two types of cotton and no significant difference was observed in the spinning operations, except in the case of Mill B, which showed higher ends down for the foreign cotton. These results agree very closely with the spinning tests made on the 1953 Pima S-1 crop.

Summary. Summarizing the harvesting tests as illustrated in Figure 1, it is quite obvious there was no significant difference in the spinning performance or the quality of the product between the hand- and machine-picked cottons. While these, of course, are only preliminary tests, they do indicate that under the several conditions involved, the machine harvesting did not, in any manner, lower the quality of the fiber with respect to its end use.

In no case did the machine-picked cotton drop more than one grade under the hand-picked. From economic studies on harvesting and ginning in Arizona, the price reduction for lowering one grade (down to Grade 4), and the extra ginning cost is more than made up by the savings in mechanical harvesting.

A further important point in these results is the fact that with adequate ginning facilities and good ginning practices, such as those listed in the U.S.D.A. ginning tests (Table 4), there is no need to take any grade reduction in machine-picked cotton. If commercial gins are properly equipped,

they too might turn out machine-picked cotton with grades equal to hand-picked, and the production savings would be quite substantial.

The tests, however, are limited, and are only indications as to what might be accomplished by proper machine picking and ginning. They are encouraging and should serve to stimulate further and more extensive tests of similar nature.

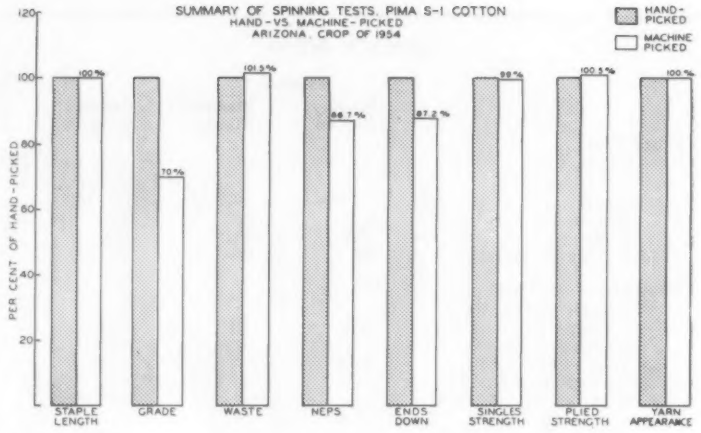

FIGURE 1. Note that there was no significant difference in the spinning performance or the quality of product between the hand- and machine-picked cottons.

Improved Method for Treatment of Wool Scouring Waste

BY W. FONG AND HAROLD P. LUNDGREN
Western Utilization Research Branch
U. S. Department of Agriculture

SUMMARY*

REDUCTION in the extent of stream pollution and improved recovery of wool grease (crude lanolin) may be possible with an experimental process for treatment of wool scouring wastes under development at the Western Regional Research Laboratory of the U. S. Department of Agriculture, Albany, California.

Raw wool must be scoured before further processing. The resulting scouring waste, because of its high concentration of grease and water-soluble organic matter, causes heavy pollution when discharged into streams. Disposal of this waste has long been a problem to the wool textile industry. The situation is aggravated by the fact that scouring plants are concentrated in the heavily industrialized and populated New England States.

For the most part, treatment of scouring waste in this country is directed toward recovery of grease as a salable by-product. Abatement of stream pollution is a secondary factor, except in those few cases where treatment of the waste is mandatory by law.

Conventional Methods. Approximately one-third of the country's wool scouring plants now operate grease recovery systems. The majority of these employ centrifuges, and the others use an acid treating procedure.

Centrifugal systems are employed primarily for the recovery of grease. Such systems seldom remove more than 30% of the grease and remove practically none of the dissolved organic matter from the waste. Consequently, there is little improvement in the characteristics of the effluent responsible for stream pollution, and further chemical or biological treatment is necessary for satisfactory pollution abatement.

In the acid-cracking process the waste scouring emulsion is "cracked" by addition of sulfuric acid to bring the liquor to a pH of about 3.5. The grease and dirt are removed after they settle by gravity. The grease is then recovered by filtration under heat and pressure.

Although acid cracking produces an effluent which is less objectionable from the standpoint of stream pollution than that resulting from centrifuging, it still gives inadequate purification. A high residual organic content and high acidity remain. With increasing use of synthetic detergents in scouring a further problem arises in acid cracking; emulsions stabilized by synthetic detergents are not easily broken by conventional acid treatment.

The New Process. Research work carried out at the Western Regional Research Laboratory has demonstrated that the effectiveness of the conventional acid-cracking process can be improved considerably by the use of a dispersible-type bentonite as an inexpensive supplementary coagulant.

The modified waste treatment procedure involves first acidifying the scouring waste with sulfuric acid to a level between 3-4 pH units, and then adding the required amount of bentonite in the form of an aqueous dispersion (Bentonite is a water-dispersible clay mineral of high adsorptive power, found in various parts of the United States.) A concentration of 0.1 to 0.5% (based upon the volume of waste treated) is required. The addition of bentonite promotes the coagulation of the grease. In addition it removes part of the water-soluble organic impurities by selective adsorption.

Under the optimum condition of treatment, the combination bentonite-acid treatment produces a

*From a paper, "Treatment of Wool Scouring Wastes with Colloidal Bentonite," appearing in the December, 1955, issue of *Textile Research Journal.*

Analytical Results of Treating Scouring Waste with Acid and Bentonite

	pH	Turbidity (absorbence units)	Grease (p.p.m.)	C.O.D. (p.p.m.)	Total Solids (p.p.m.)	Total Nitrogen (p.p.m.)
Raw Waste	9.5	4.5	18,000	6,887	44,400	920
0.5% Bentonite Treatment	9.2	3.6	10,000	5,662	35,000	730
Reduction, %			55	18	21	21
Acid Treatment	3.4	2.6	6,100	5,305	29,400	580
Reduction, %			66	33	34	37
Acid plus 0.1% Bentonite	3.4	1.5	4,300	4,015	25,800	510
Reduction, %			76	42	42	45
Acid plus 0.2% Bentonite	3.4	0.63	3,800	3,465	23,300	450
Reduction, %			79	50	47	51
Acid plus 0.3% Bentonite	3.4	0.26	2,000	2,920	22,500	430
Reduction, %			89	58	49	53
Acid plus 0.4% Bentonite	3.4	0.16	1,400	2,745	21,800	420
Reduction, %			92	60	51	54
Acid plus 0.5% Bentonite	3.4	0.11	700	2,632	21,300	410
Reduction, %			96	62	52	55
Acid plus 0.6% Bentonite	3.4	0.09	800	2,507	20,800	390
Reduction, %			96	64	53	58

voluminous precipitated sludge and a nearly clear, light-yellow, clarified effluent. This is in contrast to acid treatment alone which produces a highly turbid, light-brown effluent.

Results. The analytical results of treating a representative scouring waste with acid and bentonite are summarized in the accompanying table. The properties of the waste reported were determined by the Standard Methods for the Examination of Water and Sewage of the American Public Health Association, except for the turbidity which was measured as absorbence relative to water as zero. These results show that under optimum conditions the combination acid-bentonite treatment removes up to 95% of the original grease in the waste compared with a removal of 67% with acid treatment alone. The combination treatment lowers the chemical oxygen demand (which is an important measure of the pollutional character of a waste) by over 60% compared with acid treatment alone, which removes only 33% of the original chemical oxygen demand.

In the treatment procedure, acidification of the waste followed by the addition of bentonite produces a more satisfactory clarification than the reverse procedure. Treatment at room temperatures is generally more effective than treatment at the elevated temperatures used in scouring; however, effective clarification is obtainable at the higher temperature by a slight increase in the amount of bentonite added.

The amount of bentonite and acid required to produce effective clarification varies considerably depending upon (a) the grease and suint (water-soluble impurities in raw wool) of the waste liquor, (b) the ratio of water to wool used in scouring, and (c) the scouring procedure employed, i.e., soap-soda scouring versus neutral nonionic detergent scouring, and whether or not a desuinting step is employed.

The effectiveness of bentonite is apparently related to its water-dispersible properties. Non-dispersible clays, such as fuller's earth and kaolin, are relatively ineffective.

So far, plant tests of the bentonite-acid treating procedure indicate that the precipitated sludge can be successfully separated by gravity sedimentation using equipment employed in the conventional acid-cracking process. Preliminary results have shown that the sludge is not amenable to plate and frame filter pressing for grease recovery. The grease can be successfully extracted with hexane to produce a light-colored grease; however the practical feasibility of such a procedure has not been fully explored.

Coming Next Month!

TI's Special Purchasing Issue

Next month TEXTILE INDUSTRIES will devote a special section to a complete discussion of purchasing by the spinning, weaving, finishing, and knitting mills. The article is based on extensive interviews with mill purchasing agents, mill officials and supervisors, and with suppliers and their salesmen. The article will discuss the who and the why of purchasing — who decides what a mill will buy, and why the product of one supplier may be preferred over another. Both mill men and salesmen will be interested in some frank opinions which each gave of the other in talks with TI's editors. Look for it in TI for February.

In 1949, 69% of the full-fashioned knitting machines in the U.S. were over 10 years old . . . in 1954, only 36% were over 10 years old.

Textile Machine Works 1950 and 1954 Statistical Surveys

In the hosiery industry, the one unyielding force is obsolescence. Compare the production of your least efficient machinery with a "Reading 100" Full-Fashioned Knitting Machine—in courses per minute, dozens per hour, salability of fabric. With every Reading Machine you get the benefit of Textile Machine Works' engineering help, service and technical experience. Write us.

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KNITTING SECTION

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Keep Preboarders in Good Condition

Use of the Dunn system in processing full-fashioned hosiery requires more exacting standards at the preboarders; therefore adequate maintenance is vital. This treatise deals with many of the problems most frequently encountered.

BY HENRY EASON

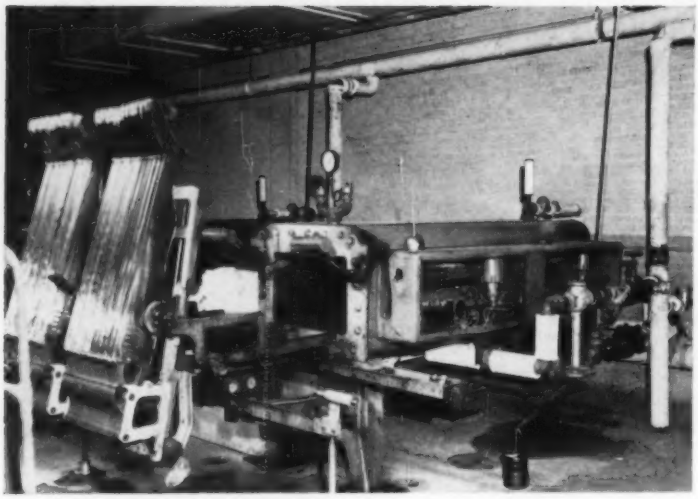
EXCLUSIVE

ADEQUATE maintenance is a necessary adjunct to smooth working boarding equipment, though these machines are rugged in construction and well adapted to severe service. The foregoing statement is especially true since the introduction of the Dunn system. Instead of preboarding, dyeing, and finish boarding the hosiery, the Dunn system calls for dyeing after the grey inspection, and the work is finish boarded on the preboarding equipment. This procedure saves the preliminary preboarding operation before the dyeing process, but more exacting standards of quality are required at the preboarders in the final finish boarding.

Steam Lines. In using the Paramount retort for finish boarding on the Dunn system, the steaming cycle must be controlled uniformly for the time interval, steam temperature, and steam pressure. Otherwise there may be variations in the shades in the same lot of dyed hosiery. This same condition could exist in any type of preboarding equipment used for finish boarding, if the cycle is allowed to vary during the processing of any lot of hosiery.

A simplified method of piping the steam supply lines to the machines is as follows: The horizontal line in back of the machine is a 6″ exhaust header to which several machines are connected. This is suitably connected to an exhaust tank where much of the waste heat is reclaimed for heating a hot water tank. All piping, including the exhaust system, is covered with 85% magnesia pipe covering protected with a layer of canvas. After sizing the canvas, a coat of enamel is helpful. The cooling leg for the vertical steam drop extends to the floor, thereby providing a strong support for the steam line, valves, strainer, and regulator.

A satisfactory processing cycle for the Paramount retort is as follows: With the goods inside the retort, steam pressure is maintained at 15 to 17 pounds at 244 F to 250



SIMPLIFIED PIPING LAYOUT for steam supply lines. Horizontal line in back of machine is a 6" exhaust header for several machines. All piping is covered.

F for one minute. Exhaust requires 15 seconds, and stocking carriage ejection is delayed about 15 seconds after the door is opened, depending entirely upon the moisture content of the stocking welts and atmospheric conditions.

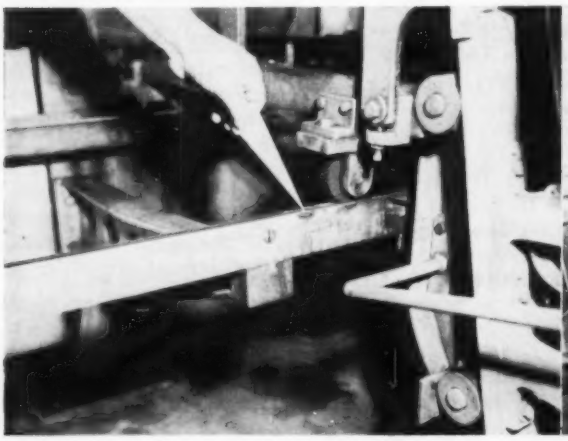
Leveling the Retort. Several factors should be considered before establishing a maintenance program for the preboarding machines. Faulty operation of the carriage may result if the retort is not level; therefore, the first step is to obtain a long spirit level and lay it lengthwise on the front track. Carefully adjust the jack screws on the four feet of the retort until the track is level; do not adjust the trunnion track assembly at this time. Lay the spirit level lengthwise on top of the retort, and adjust the rear leg jack screws until the machine is level, then raise the back end of the retort approximately ¼" to get a slight pitch forward. Adjust the front track posts, being careful that the track is not forced out of line.

Next, move the entire carriage assembly from side to side on the tracks until it stops against the right and left bumper assembly. Any resistance to the free-roll of the carriage should be checked because this factor induces operator fatigue. Frequently the front rail rollers have developed flat spots on their outer surface and should be replaced with new parts. If the roller bearing is not damaged, only the fibrous part of the front rail rollers should be installed.

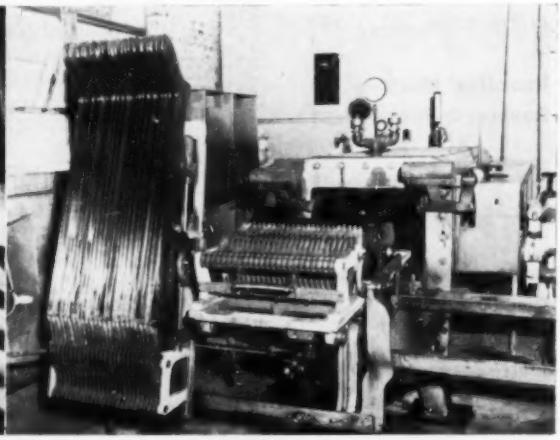
The next step is to level the four carriage tracks across the retort front by using the long spirit level. The tracks may have a slight forward pitch because the rear of the retort is elevated ¼" as mentioned previously. When all of the form carriage rollers have been checked for flat spots caused by wear, and have also been correctly aligned to prevent binding on the tracks, then push the form carriage just inside the retort door. It is desirable to have the carriage loaded with forms for the next test.

Pull the form carriage out of the retort until the first rollers start on the trunnion tracks. Raise or lower the ends of the tracks until the rollers touch lightly. Tighten the cap screws snugly and bring the stop screws up against the cap screws to prevent slipping. Then adjust the front ends of the right and left trunnion tracks until they are approximately level with the ends closest to the retort. Set the stop screws against the cap screws. Both sets of tracks must be adjusted in the same manner. Leave the adjustment as it is until the form carriage ejection from the re-

WEAR NOTCHES WERE FILLED and ground smooth in only 30 minutes by welding company and portable outfit. Cost was about $2.50 per preboarder—less than cost of labor to remove carriage track.



SLIGHT FORWARD PITCH of tracks is due to the rear of the retort being elevated ¼". This pitch may be noted upon leveling the four carriage tracks across the retort front.



tort is tested.

Ejector Assembly. With the switch in the "off" position, push the form carriage inside the retort until it engages the ejector assembly. The force required to push the carriage should be just enough to cause it to reach the stopping place within the machine in not less than three seconds and no more than four seconds. If the carriage is operated within these limits, excessive maintenance will be prevented.

Eject the form carriage by striking the ejector release rod with a block of wood or other soft object. From the start of the release or kick, the carriage should travel the 88 inches to the stop at the end of trunnion tracks in exactly six seconds. If either form carriage hits the trunnion track stops too hard, raise the front ends of the trunnion tracks slightly to slow the form carriage. In some instances, the front ends of the trunnion tracks must be lowered to make the carriage come to rest in the stops before dropping into the upright loading and unloading position. Rarely is it necessary to raise the rear end of the retort more. However, trouble may be located in the plunger bracket assembly.

Failure to properly eject the form carriage is often due to a broken spring in the plunger bracket asembly. Another source of trouble is the plunger which is made of brass and often bends easily, thereby causing binding in the plunger bracket. Replace the defective parts with new ones, and save trips inside of the machine.

Safety Precautions. A word of caution about doing maintenance work inside of a retort: (1) Always make certain that the switch is in the "off" position. (2) Shut off the main steam valve controlling the defective retort. (3) If more than one preboarder is connected to an exhaust line, have a shut-off valve in the exhaust line of each machine so that it can be closed when anyone is working inside the retort. This precaution may save serious scalding of some person, and may save a life. This same rule will apply when working inside of any steam boiler or pressure vessel.

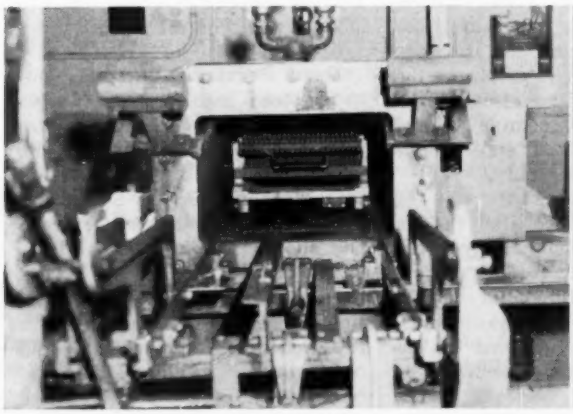
Form Carriage. Sometimes the form carriage will fail to become engaged, or disengaged, from the ejector latch hook assembly within the machine. The trouble may be caused by loose or worn bolts in the assembly, a loose or broken latch hook spring, or the latch hook may be of the old type which should be replaced with the new part made of stainless steel. The entire ejector assembly can be modernized by using replacement parts and bolts made of stainless steel, all available through the field service representative.

The moving parts of the ejector assembly can be kept free of sizing when preboarding conventional grey hosiery by using a pressure type oil can to squirt either 10 or 20 weight motor oil on it through the doorway. The oil should be applied two times weekly or more frequently, depending upon how much the machines are used.

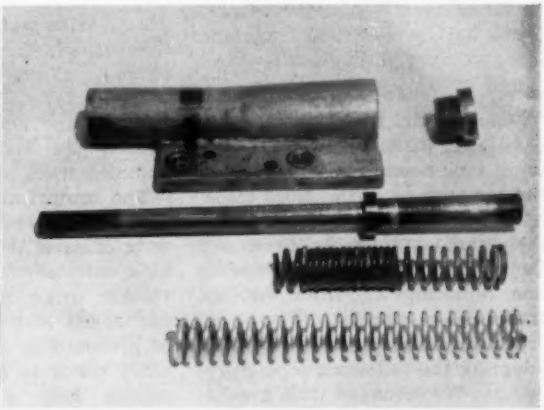
When the ejector latch hook is in the cocked position, the connecting linkage to the solenoid rod will cause it to remain in a neutral position, thereby opening a limit switch. This will open the time cycle controller circuit, if the retort is an early model, or stop the timers if it is a late model, causing the timing mechanism to remain in a stopped position until another form carriage is pushed into the machine.

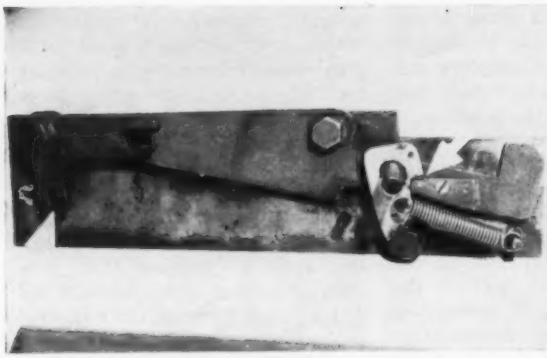
When a form carriage is pushed into the retort, the ejector latch hook will be released, and the form carriage ejector hook will lock the carriage in place against pressure from the ejector plunger and spring. Connecting linkage from the ejector assembly to the solenoid rod will close the starting circuit through the limit switch, thereby starting the machine through a controlled cycle of operation. Door closing, steam on, steam off, exhaust, door opening, and carriage ejection then follow automatically in timed sequence of operation. The operator then strips and dresses the forms according to some prearranged method. The machine will not start

FORCE REQUIRED to push the form carriage inside the retort to engage the ejector assembly should be enough to reach the stopping place in the machine in not less than three seconds nor more than four seconds.

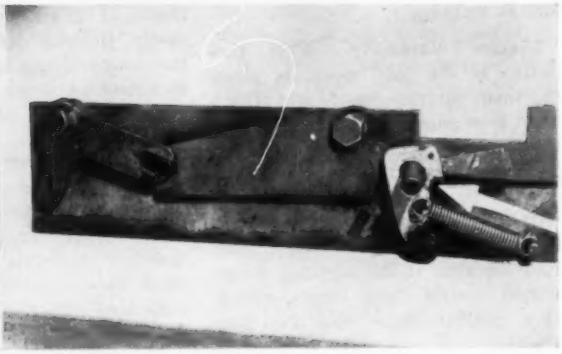


FAILURE TO PROPERLY EJECT the form carriage is often due to a broken spring in the plunger bracket assembly. Note broken spring above new spring. Plunger is made of brass and bends easily.





COCKED EJECTOR ASSEMBLY. Form carriage may fail to be engaged, or disengaged, from the ejector latch hook assembly. The trouble may be caused by loose or worn bolts in the assembly. This ejector assembly is cocked and ready to lock the carriage in place. Arrow indicates ejector latch hook is engaged above the ejector latch hook catch and held in place by the spring.



EJECTOR LATCH HOOK is released (as shown here) when a form carriage is pushed into the machine. Then the form carriage ejector hook will lock the carriage in place against pressure from the ejector plunger and spring.

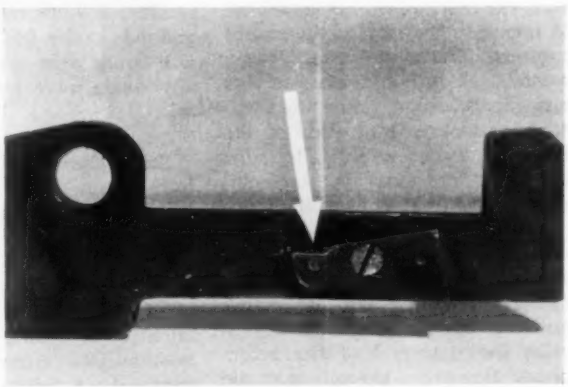
normally until another form carriage is pushed into the retort.

Failure to Stop. After the machines have been in operation over a period of time, they may fail to stop after the carriage has been ejected and will continue to run through another cycle of operation when empty. This trouble is caused by the ejector latch hook failing to stay in the cocked position above the ejector latch hook catch.

To correct the trouble, first remove the ejector latch hook catch from the form carriage ejector hook. Carefully grind or file the ejector latch hook catch to the shape indicated by the arrow in the accompanying illustration. The scribed portion below the arrow in the illustration is to be removed, giving a different angle to the seat for the ejector latch hook. This remedy will allow greater flexibility in setting the spring collars on the solenoid rod, and will prevent the preboarding machine from running through a cycle of operation when empty.

Notch Wear. If the preboarders have been in operation for a long time, four notches will appear on the top surface of the front track, and these will hinder movement of the carriage assembly back and forth. The expense of removing and replacing the front carriage track can be avoided.

We minimized lost time by adopting the following repair procedure: We arranged with a welding company to bring a portable welding outfit and a portable grinder to our boarding room. The notches were filled in only 30 minutes. The surface was ground to a smooth finish, and the cost was about $2.50 per machine, which is less than the labor cost would be to remove the carriage track.



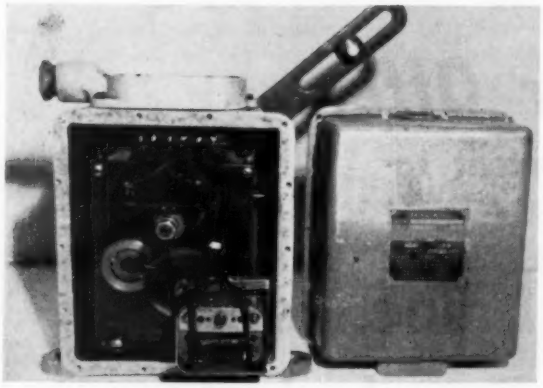
FAILURE OF EJECTOR LATCH HOOK to stay in the cocked position above the ejector latch hook catch will permit the machine to continue running after the carriage has been ejected and it is empty. To correct the trouble, grind the catch to the shape indicated by the arrow.

About four inches to the left of the notch (see photo) is another notch directly under the front track roller. On the left end of the front track, two more notches usually appear in the same relative position. The notches are made by the hammer-like action of the form carriages being ejected from the machine and coming to rest against the hooked end of the trunnion track assembly.

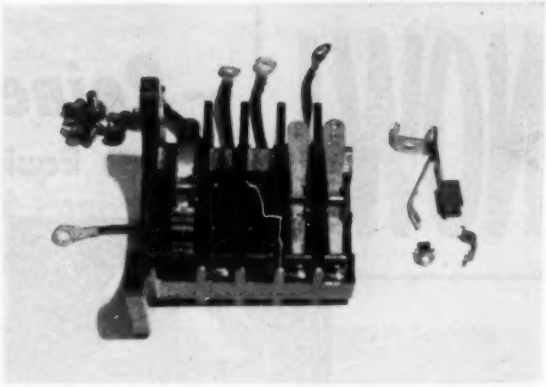
The control motors for opening and closing the doors on the retorts of some machines give very little maintenance trouble. Should trouble occur, the motor can be exchanged with the manufacturer of preboarding equipment for another motor in good condition by paying only a nominal repair charge which is governed entirely by the repairs required on the returned motor.

The retort doors should never be opened or closed manually; otherwise damage may be inflicted on the door-operating equipment. This is especially true of the models with control motors.

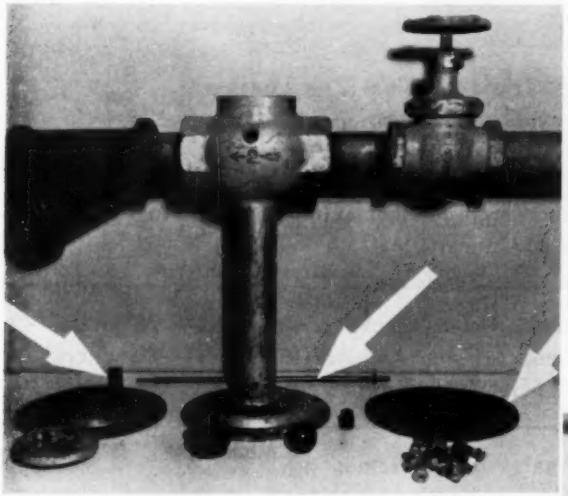
Steam Regulator. The clevis pin in the steam regulator often shows excessive wear and should be replaced. A brass stem transmits the motion of the diaphragm in lifting the ball from the seat. Sometimes the brass rod gets bent or worn and should be replaced carefully with a new rod of correct length. Failure of the regulator to function properly is often due to a ruptured diaphragm which should be replaced with suitable diaphragm material.



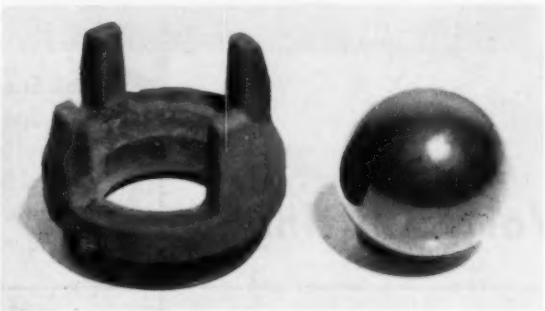
CONTROL MOTORS for opening and closing doors on retorts may be exchanged with the manufacturer of the preboarding equipment.



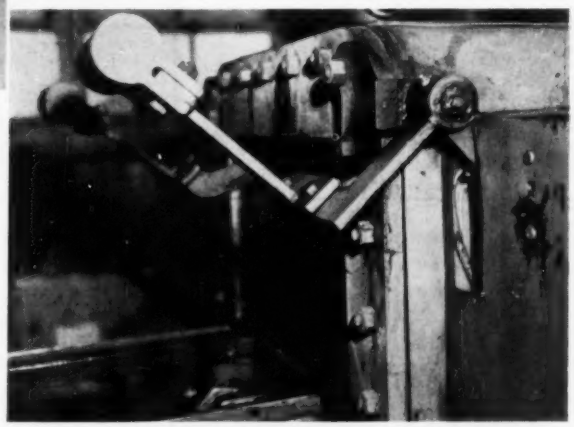
BROKEN CONTACT ARMS from a control motor were damaged by opening and closing retort doors manually.



STEAM REGULATOR dismembered reveals that the clevis pin should be replaced. Arrow on left indicates position of clevis pin. Center arrow points to brass stem which occasionally needs replacement. Diaphragm, indicated by arrow on right, should also be checked for ruptures.



BALL AND SEAT of steam regulator often become pitted and need replacement.



RETORT DOOR ARMS bolted too tightly sometimes prevent doors from closing properly.

When the regulator is properly adjusted, nearly 100 lb of steam is required on the pressure line to operate it correctly. When the pop-valves open on the retort for no apparent reason, it is often caused by the steam supply pressure being too low to raise the regulator weights. This condition allows an excess of steam to leak past the ball seat, thereby building up excessive retort pressure.

The ball seat of the steam regulator often becomes pitted from normal wear and tear. When this happens the ball will not seat properly, and steam regulation will be erratic. The remedy is to replace the ball seat and also the ball if it is pitted or worn. The ball seat may be removed by using a special crowfoot tool available from the factory or field service representative.

Retort doors failing to close properly is a difficulty often caused by the arms being bolted too tightly. Another cause of faulty door operation is the use of arms that have been bent. It is better to install a new arm than one that has been welded at an improper angle.

Faulty gaskets should be replaced with new ones to stop excessive leaks. When installing a new gasket, make certain that the seat inside the retort is clean.

The entire machine should be

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- High Speed Tricot Machines (2 — 3 bar).
- High Speed Tulle Machines.
- Simplex (double knit) Machines.
- Raschel Machines.
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- A Full Line of Creels.

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- Automatic Shuttle Embroidery Machines (10 and 15 yards).
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In the manufacture and sale of these machines, we shall continue to live up to the REINER tradition of QUALITY machines, a reliable advisory and parts service, and careful, conscientious attention to your orders and wishes.

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cleaned at regular intervals, and a regular oiling and inspection schedule should be organized to prevent excessive maintenance. We have discovered that properly oiling the machines, both internally and externally, has prolonged the life of most working parts.

Men's Hose Packaged Four Times Faster with Mill-Made Pneumatic Device

STAFF PREPARED

EXCLUSIVE

A PNEUMATIC hosiery packaging machine at Mauney Hosiery Mills, Kings Mountain, N. C., has increased the speed of packaging men's socks by 4 to 5 times over the hand insertion method formerly used.

The Package Sells the Product. To display the hosiery attractively, the mill uses cellophane bags with a window on each bag to make the socks partially visible to a potential customer. The socks are packed one pair to a bag.

The bags were formerly filled by hand, but for the past two years the mill has been using a system devised by the superintendent of dyeing and finishing, M. A. Hill.

Mill-Made Packaging Device. The packaging device consists of an air chamber made of sheet metal and measuring about ¾″ x 12″ x 14″; a stainless steel tray to hold the socks, mounted on an incline above the air chamber; and a chute to carry the packaged socks to the next operator.

The air chamber has an outlet at the end of the inclined tray, and acts to disperse the incoming current of air before it is emitted through the outlet. The bag is thus held open while the socks are inserted. The lips of the bags are placed under the lip of the air chamber, to hold them in place.

The operator places a pair of socks in the steel tray, folds one corner, and pushes it into the bag, using a 12″ rule as a pushing implement. The filled package is pushed into the chute, which carries it to the next operator for sealing and packing.

This arrangement has expedited packaging and cut costs considerably, while making the job easier. The device has given excellent results during the two years it has been in operation, and has required no maintenance.

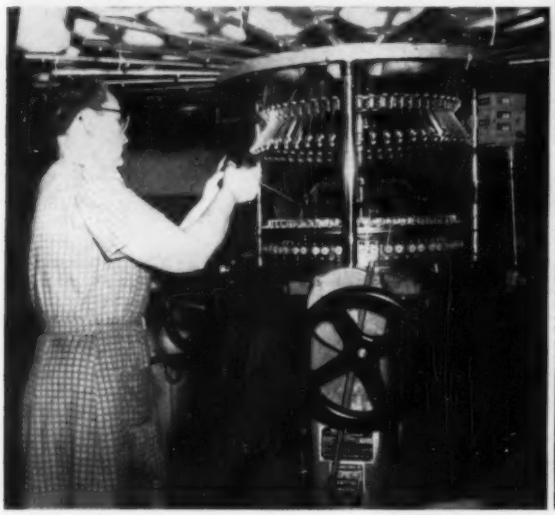
PACKAGING DEVICE (1) consists of an air chamber, stainless steel tray to hold a pair of socks, and a chute to carry the packaged goods to the next operation. Operator places a pair of socks in the tray (2), folds one corner, and pushes it into the bag. Air from chamber keeps bag open during packaging operation. After packaging, bag containing pair of socks goes to next operator for sealing and packing (3).

Tips for Body Knitters

STAFF PREPARED

EXCLUSIVE

Operation and maintenance of modern circular knitting machines are made easier by conscientious cleaning and lubrication. These photographs and captions illustrate six good manufacturing habits to get into, as they are practiced by Chalmers Knitting Co., Amsterdam, N. Y.



LUBRICATE HEAVY PARTS such as meshing gears daily. Oil needles and sinkers after doffing each roll. Photo shows operator doing the latter job.

CLEAN LINT FROM MACHINES as often as they need it. Blow down machine from top to bottom; airline pressure should be kept at 35 pounds or less to prevent end breakage. Fans properly placed above (top center) will help keep cones and ends free of lint.

Hints for Dyeing and Finishing Acrilan Sweaters

THE IMPORTANCE of removing metallic salts from Acrilan acrylic fiber bleaching baths was emphasized by Walter H. Hindle, associate director of research, in charge of dyeing and finishing, for the Chemstrand Corporation, in a report on recent developments in one hundred per cent Acrilan sweater dyeing and finishing.

The difference in purity of white obtainable between goods containing trace metals and those metal-free was very marked, he said, and this improvement also manifested itself in an increased degree of stability in Fade-Ometer tests. The adverse effect of metallic salts may emanate from the water source or even the dyeing equipment when certain types of stainless steel are used under the corrosive influence of acid chlorite bleaching, he continued.

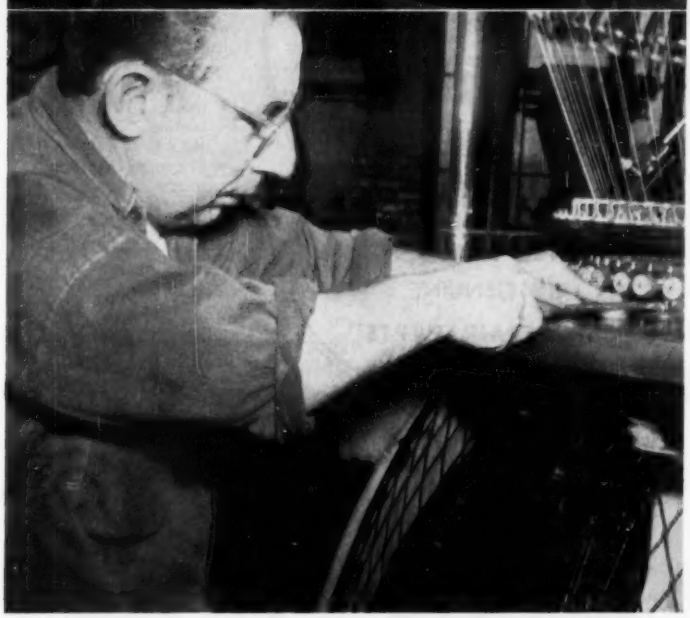
He said a number of regularly used sequestrants were evaluated as a means of overcoming this condition but without significantly good results. However, it was found that by the introduction of phosphoric acid as an addition to the conventional acid pretreatment step and as a post-bleaching sour, the effect of trace iron salts could be removed to give a white of good purity and stability to light.

The revised bleaching process, therefore, calculated to eliminate the effects of metallic salts, is as follows:

The goods are scoured for 20 minutes in 2 g/l sulfuric acid, 2 g/l phosphoric acid, 1 g/l nonionic detergent at a temperature of 200 F. At the expiration of this period, the temperature is dropped back to 160 F and 1 g/l Textone is added. Bleaching is allowed to continue for 25 minutes, at which time an

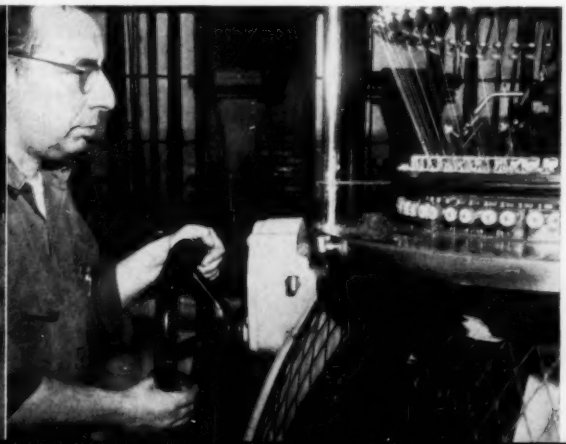
(Continued on page 185)

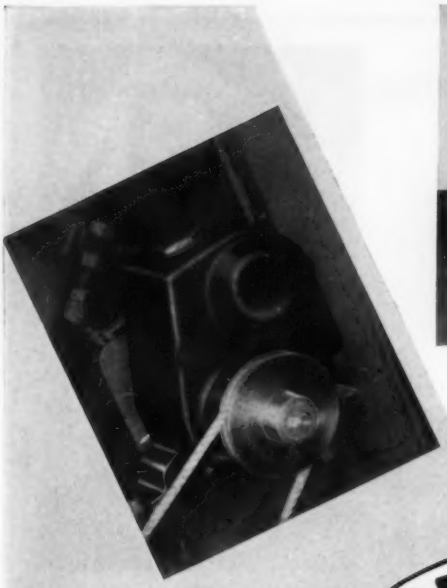
WIPE OIL FROM ALL PLACES that can transfer a stain to the cloth. Operator here wipes one such spot: the oil cup that catches overflow from needle lubrication system. Other oil gatherers are bed plate and floor. It's wise to keep a wiping cloth by each machine.

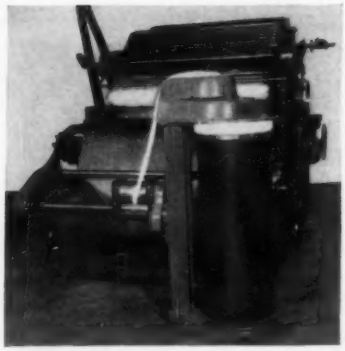


CHECK CLOTH FOR CORRECT WEIGHT once or twice a week (top photo). Another good habit is to count courses regularly as shown in photo, also after any stitch adjustment is made. Courses per inch should be "on the nose." Bottom photo: Change all needles every year whether you think they need it or not. Latches on old needles tend to fall under hooks, cause bad wales that will show up as lines. Fixer in photo is removing a section block to replace needles.

INSPECT CLOTH AS IT KNITS as much as possible. If it doesn't look right stop the machine and check it. Keep an eye out for uneven cloth; if in doubt pull the suspected section of ends back from tension devices, one by one, mark with a lipstick (left), and run machine with hand wheel (right). If an end does not feed evenly as shown by level of marked point, adjust its stitch dial.

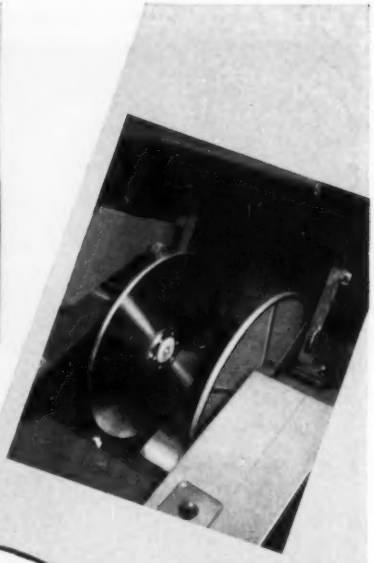






14" AND 15" COILERS

- Lengthens the doffing cycle.
- Adds extra poundage per can.
- Increases production per man hour.



4" PINTLE FOR LAP WINDERS

- Full spools 2" larger in diameter for greater productive efficiency.
- Improved grease retention in bearings for better lubrication.
- For increased stud rigidity and load capacity.

ANTI-FRICTION COMB BOX

- Requires only routine inspection.
- Vibration and power consumption at a minimum.
- Micrometer-type two-way adjustable foot-end stand.

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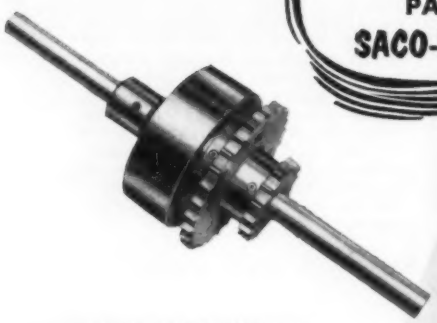

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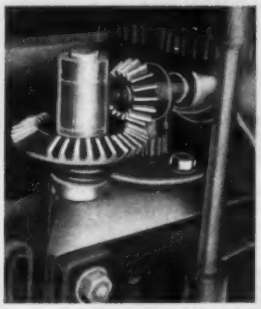
- Extremely accurate, with very low power consumption.
- No oil drip — three grease fittings only.
- More compact arrangement of internal gearing.



STEEL GAP GEAR FOR ROVING FRAMES

- Eliminates gap gear tooth breakage.
- Spring cushioned meshing of gears at change of builder motion.

MULTI-DURO SLASHER ROLL

- Improves evenness of size application.
- Reduces size consumption.
- Less shedding at split rods and loom.
- Minimizes end breaks in the weave room.

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HOW OTHER MEN MANAGE

• Letters to Editor • Technical Discussion •
• Manufacturing Briefs • Kinks & Short Cuts • Comments from Readers •

Write to the Editors!

Readers are invited to make use of this section for further discussion of published articles, or for discussion of problems arising in the plant. Names will not be used without permission. Payment is made for practical articles or for letters containing manufacturing information.

Address: Editor "Textile Industries," 806 Peachtree St., N. E., Atlanta 5, Ga.

"Cut Meter" for Heavy Warps Can Be Made in the Mill

EDITOR TEXTILE INDUSTRIES:

We run a considerable number of heavy Fiberglas warps with very low pickage. Each style requires a different cut length; for example, some cuts are 150 yards, some 250 yards, some 350 yards, some 500 yards, etc.

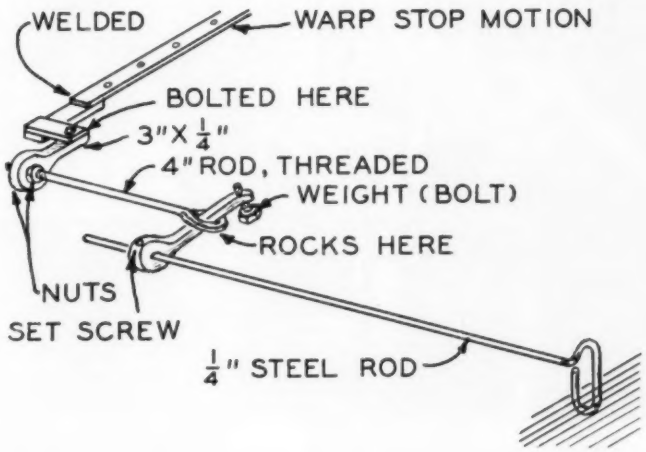
Some of this cloth, being a heavy satin weave, can not be pulled back if the cut mark goes by, and in most cases the cloth rolls will not take a double cut. It is also difficult for cloth boys to judge the length of a cut with so many different sized rolls, and on 14- and 18-pick fabrics cut marks come down very quickly and can easily be missed. Therefore, we were getting cuts of uneven length.

To overcome this situation, we made our own "cut meter," as shown in the accompanying photograph and sketch. We first welded a 2″ extension on the part where the drop wire cable is fastened. This was made from ⅛″ flat stock steel.

To this we bolted a 3″ x 1″ piece of ¼″ steel stock, with a ¼″ hole in the center. We then took a worn-out part of a crow hop, and fastened it to the steel stock with a ¼″ screw 4″ long, with nuts on the end of the screw so that it can move freely. A ⅝″ bolt was fastened to the crow hop part to act as a weight.

A 12″ piece of ¼″ round steel stock was then set-screwed to the

(Continued on page 135)



KINK CONTEST!

$100 will be awarded the winner

Send your entry now! This contest ends April 15, 1956

Every kink, short-cut, time-saver, or quality improvement suggestion entered in the contest will be paid for immediately upon acceptance. The $100 award will be made as soon as all entries are judged.

The contest rules are simple:

► All contributions must be postmarked not later than midnight, April 15, 1956.

► No limit to the number of entries an individual may submit in any one contest.

► All entries paid for upon acceptance — no waiting. Extra payment for photographs that are usable. Extra consideration is also given kinks accompanied by legible pencil sketches or drawings.

► Entries must not have been published previously and must not be submitted to any other publication.

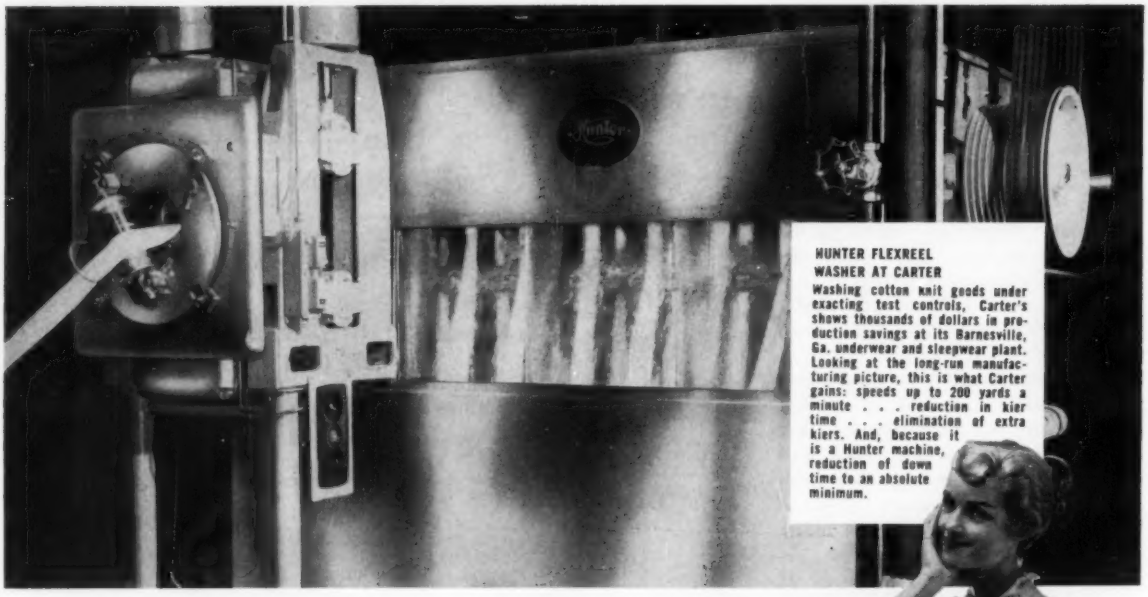
Send your contest entry to:
Editor TEXTILE INDUSTRIES,
806 Peachtree St., N. E., Atlanta 5, Georgia.

HUNTER FLEXREEL WASHER

WITH UNIQUE CLOTH TENSION CONTROL

PUTS PROFITS IN COTTON KNIT GOODS

WASHING AT... *Carter's*



HUNTER FLEXREEL WASHER AT CARTER

Washing cotton knit goods under exacting test controls, Carter's shows thousands of dollars in production savings at its Barnesville, Ga. underwear and sleepwear plant. Looking at the long-run manufacturing picture, this is what Carter gains: speeds up to 200 yards a minute . . . reduction in kier time . . . elimination of extra kiers. And, because it is a Hunter machine, reduction of down time to an absolute minimum.

In addition to the Hunter Flexreel Washer, like the one at The William Carter Co., Hunter makes a Conereel Washer with air operated guide pins which permits tension-free processing of a wide variety of fabrics such as cotton knit goods, lawns and heavy bark cloths. Fabrics are handled at speeds up to *300 yards a minute* . . . preserving full fabric strength without surging or seam breakage.

PUT *PROFITS* IN YOUR WASHING OPERATION WITH THE HUNTER FLEXREEL WASHER

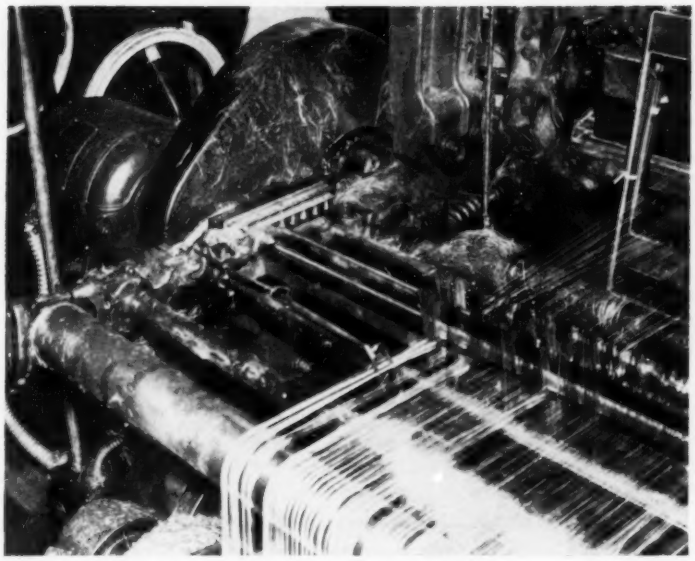
JAMES HUNTER MACHINE COMPANY

BUILT BY HUNTER ...IT'S DEPENDABLE

NORTH ADAMS, MASSACHUSETTS FOUNDED 1847

plus production

+ efficient operation of modern equipment
+ less down time of equipment
+ quick, easy repair . . . rapid parts delivery



Cut Meter

(Continued from page 133)

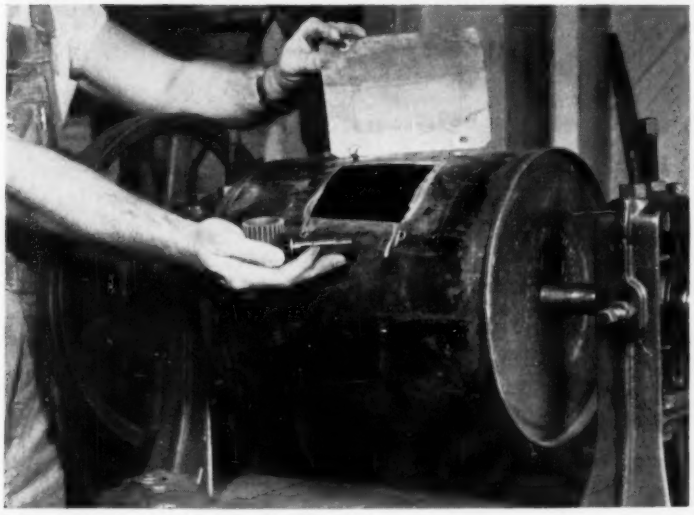
crow-hop part, and the other end of it was shaped in the form of an elongated "O."

Most of our warps are made on a horizontal warper, and the warper tender puts on a few inches of lease string in addition to cut marks, or, on certain styles, puts on a piece of pressure-sensitive tape. This comes up in the warp, engages the "O" end of the ¼" wire, and shoves it down to the drop wire bar. When the loom stops, the weaver informs the cloth boy, and the cut is taken off at the correct yardage.

The 12" wire can be moved in and out to take care of different cloth widths.

CONTRIBUTOR No. 8816

Aid for Full-Fashioned Mills



Just a reminder — a polishing tumbler can be made cheaply and will pay for itself time and again. —*Staff.*

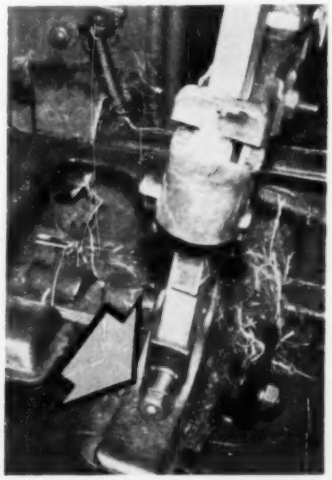
HOW OTHER MEN MANAGE

Extra-Long Bolt Makes It Easy To Tighten XD Picker Stick

EDITOR TEXTILE INDUSTRIES:

On Draper Model XD looms the heel bolt on the picker stick is very close to the parallel shoe. If the bolt comes loose and wears the picker stick hole a little, you cannot get a wrench on it; and even when not worn it will not take a socket wrench. If the bolt is not kept absolutely tight, the picker is soon low and does not give a lift to the shuttle.

We overcome this difficulty and keep this nut tight by using a picker stick bolt which is 1½" longer than the original, and on which we put a ½" collar (see



accompanying illustration). This extends the bolt out far enough so that a socket wrench can be used on it, and it is therefore much more easily tightened and kept tight.

CONTRIBUTOR No. 8826

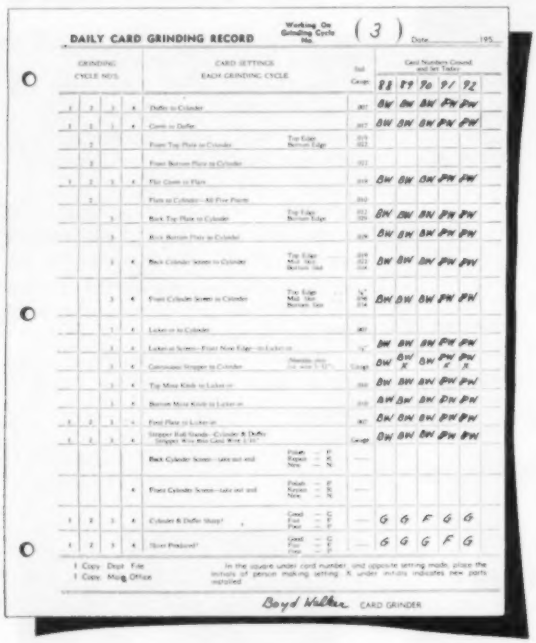
Card Grinders Do a Better Job When They Record Their Work

EDITOR TEXTILE INDUSTRIES:

We have recently come up with a control form to be used by card grinders in our mill (see accompanying illustration). We think it has many good features and it has certainly increased the interest in grinding and setting cards in our plant, in addition to giving the supervision a record of what parts are being set by the grinders each day.

In following the schedule of grinding and setting as shown on this form, and in filling out this type form, signing it, and turning it in daily, our card grinders have become more conscious of the importance of their jobs in the manufacturing set-up.

CONTRIBUTOR No. 8825



DAILY CARD GRINDING RECORD

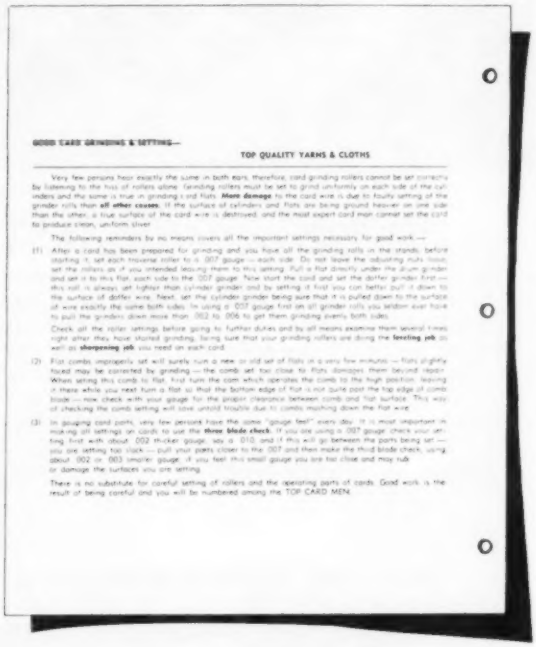
Working On Grinding Cycle No. (3) Date _____ 195__

GRINDING CYCLE NOS.				CARD SETTINGS EACH GRINDING CYCLE		Std. Gauge	Card Numbers Ground and Set Today: 88	89	90	91	92
1	2	3	4	Doffer to Cylinder		.007	BW	BW	BW	PW	PW
1	2	3	4	Comb to Doffer		.007	BW	BW	BW	PW	PW
	2			Front Top Flats to Cylinder	Top Edge / Bottom Edge	.019 / .022					
	2			Front Bottom Flats to Cylinder		.022					
1	2	3	4	Flat Comb to Flats		.019	BW	BW	BW	PW	PW
	2			Flats to Cylinder—All Five Points		.010					
		3		Back Top Flats to Cylinder	Top Edge / Bottom Edge	.012 / .026	BW	BW	BW	PW	PW
		3		Back Bottom Flats to Cylinder		.026	BW	BW	BW	PW	PW
		3	4	Back Cylinder Screen to Cylinder	Top Edge / Mid. Set / Bottom Set	.019 / .022 / .026	BW	BW	BW	PW	PW
		3	4	Front Cylinder Screen to Cylinder	Top Edge / Mid. Set / Bottom Set	.16" / .016 / .014	BW	BW	BW	PW	PW
		3	4	Lickerin to Cylinder		.007					
		3	4	Lickerin Screen—Front Now Edge—to Lickerin		.16"	BW	BW	BW	PW	PW
		3	4	Cylinder to Stripper	Needles per Inch / Gauge	Gauge	BW	BW K	BW	PW E	PW R
		3	4	Top Main Knife to Lickerin		.010	BW	BW	BW	PW	PW
		3	4	Bottom Main Knife to Lickerin		.010	BW	BW	BW	PW	PW
1	2	3	4	First Plate to Lickerin		.007	BW	BW	BW	PW	PW
1	2	3	4	Stripper Roll Wards—Cylinder & Doffer / Stripper Knife Main Card Wire (.25")		Gauge	BW	BW	BW	PW	PW
				Back Cylinder Screen—take out and	Finish — 6" / Repeat — 6" / New — 16"						
			4	Front Cylinder Screen—take out and	Finish — 6" / Repeat — 6" / New — 16"						
1	2	3	4	Cylinder & Doffer Sharp?	Good — 12" / Fair — 9" / Poor — 6"		G	G	F	G	G
1	2	3	4	Stone Produced?	Good — 12" / Fair — 9" / Poor — 6"		G	G	G	F	G

1 Copy Dept. File
1 Copy Mailg. Office

In the square under card number, and opposite setting made, place the initials of person making setting. X under initials indicates new parts installed.

Boyd Walker CARD GRINDER



GOOD CARD GRINDING & SETTING—

TOP QUALITY YARNS & CLOTHS

Very few persons hear exactly the same in both ears, therefore, card grinding rollers cannot be set correctly by listening to the hiss of rollers alone. Grinding rollers must be set to grind uniformly on each side of the cylinders and the same is true in grinding Lickerins and Flats. **More damage** to the card wire is due to faulty setting of the grinder rolls than **all other causes.** If the surface of cylinders and flats are being ground heavier on one side than the other, a true surface of the card wire is destroyed, and the most expert card man cannot set the card to produce clean, uniform sliver.

The following reminders by no means covers all the important settings necessary for good work —

(1) After a card has been prepared for grinding and you have all the grinding rolls in the stands, before starting it, set each traverse roller to a .007 gauge — each side. Do not leave the adjusting nuts loose, set the rollers as if you intended leaving them in this setting. Pull a flat directly under the drum grinder and set it to this flat, each side to the .007 gauge. Now start the card and set the doffer grinder first on this roll is always set lighter than cylinder grinder and by setting it first you can better pull it down to the surface of doffer wire. Next, set the cylinder grinder being sure that it is pulled down to the surface of wire exactly the same both sides. In using a .007 gauge first on all grinder rolls you seldom ever have to pull the grinders down more than .002 to .006 to get them grinding evenly both sides.

Check all the roller settings before going to further duties and by all means examine them several times right after they have started grinding, being sure that your grinding rollers are doing the **leveling job** as well as **sharpening job** you need on each card.

(2) Flat combs improperly set will surely ruin a new or old set of flats in a very few minutes — flats slightly fouled may be corrected by grinding — the comb set too close to flats damages them beyond repair. When setting this comb to flat, first turn the cam which operates the comb to the high position, leaving it there while you next turn a flat so that the bottom edge of flat is not quite past the top edge of comb blade — now check with your gauge for the proper clearance between comb and flat surface. This way of checking the comb setting will save untold trouble due to combs mashing down the flat wire.

(3) In gauging card parts, very few persons have the same "gauge feel" every day. It is most important in making all settings on cards to use the **three blade check.** If you are using a .007 gauge, check your setting, first with about .002 thicker gauge, say a .010, and if this will go between the parts being set — you are setting too close — pull your parts closer to the .007 and then make the third blade check, using about .002 or .003 smaller gauge. If you feel this small gauge you are too close and may rub or damage the surfaces you are setting.

There is no substitute for careful setting of rollers and the operating parts of cards. Good work is the result of being careful and you will be numbered among the TOP CARD MEN.

Mill Man Answers Question on Stitch Setting of Full-Fashioned Hosiery

EDITOR TEXTILE INDUSTRIES:

We have read with interest the article "This Simplified System Reduces Full-Fashioned Seconds," by S. Benton Davis [TI for September, 1955, pp. 168-169, 173, 174-175]. There is, however, one point between Steps 4 and 5 (see illustrations with the article) about which we would like to ask you the following:

Is the work put into the stitch setting box without being removed from the trays? If so, what about the trays? Do they get wet? We would appreciate full details on temperatures and moistures required for stitch setting, and also the brand name of the machine used. It is very interesting indeed if the work does not have to be removed from the trays for stitch setting.

DIRECTOR-GERENTE
Manufacturas Antonio Gassol
Mataro, Spain

[*Mr. Davis was asked to give details on the stitch setting procedure at his plant—Eds.*]

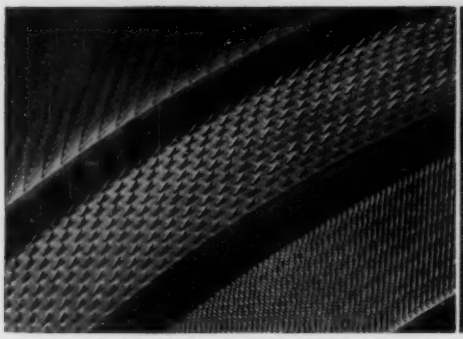
EDITOR TEXTILE INDUSTRIES:

We place the stockings in the tray at the knitting machine, and they are not removed from this tray until they are taken out by the seamer just prior to the seaming operation. In other words, they remain in the tray through the entire stitch setting cycle.

For the stitch setting cycle we use a Lydon box, manufactured by Lydon Brothers, Inc., 85 Zabriski St., Hackensack, N. J.

The manufacturer recommends

(Continued on page 139)



Ashworth Tips ON CARD CLOTHING

No. 25 in a Series

CARE OF CARD FEED ROLLS

There is an important relation of the feed roll to the quality of carding. Uniform detachment of fibres from the picker lap is not obtainable unless the entire assembly is in good mechanical condition.

The weighting arrangement of this member of the card lends itself to rapid wear of bearings and journals, if oiling is not attended to and oil holes kept open. Plucking of large tufts of fibre, resulting in the formation of neps and other irregularities in the sliver, can be expected if excessive wear is present.

Worn journals can be rebuilt to their original diameters; but care must be exercised should boring and bushing of the bearings be attempted, since there is a definite relationship between the bottom of the feed roll and the surface of the feed plate. Usually, when the roll, journals and bearings are new, there is .006″ to .008″ clearance between the roll and the surface of the plate. Repairs to bearings by boring and bushing should be undertaken with extreme care so as not to alter the clearance established by the manufacturer of the card.

Feed rolls should be properly weighted, with weight hooks straight and weights free from any interference from protruding bolts or nuts.

Flutes that are nicked and burred tend to accumulate fibre in the form of a roller lap. If allowed to build up, uniform pressure throughout the feed roll's length is not obtained. Those that have become rounded excessively, or where the grooves are too shallow, fail to exert an adequate "bite" and permit the lickerin to detach small tufts of stock without benefit of its combing action.

Where synthetic fibres are being carded, and because plucking to any degree is detrimental to quality and sometimes to card clothing as well, a feed roll wound with a special flat top wire will be found to operate to the mill's advantage. Designed to afford a slight penetration into the lap, it increases fibre friction and, by reason of the direction in which the teeth point, exerts a holding action that enables the lickerin to function more effectively.

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Greenville*†‡ Charlotte†‡ Dallas†‡ (Textile Supply Co.)
E. G. Pawles, Representative — Los Angeles, Calif.
*Factory †Repair Shop ‡Distributing Point
3 Factories • 6 Repair Shops • 7 Distributing Points

PRODUCTS AND SERVICES

Clothing for Cotton, Wool, Worsted, Silk, Synthetic Fibre and Asbestos cards and for All Types of Napping Machinery. Brusher Clothing and Card Clothing for Special Purposes. Lickerin Wire and Garnet Wire. Sole Distributors for Platt's Metallic Wire. Lickerins and Topflats Reclothed.

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Ashworth PIONEERS IN CARD CLOTHING

3 FACTORIES • • • 6 REPAIR SHOPS • • • 7 DISTRIBUTING POINTS

Ashworth
CARD CLOTHING

It's "Plough Ground"

All Ashworth cylinder and doffer fillets for processing cotton and many of the staple synthetic fibers are "plough ground". Plough grinding consists of running a "plough", with a thin grinding disc directly above it, between each row of fillet wire. Thus the wires or teeth are gradually tapered above the knee to a working point on each side. The front and back of the wire are not ground, so that strength in the carding direction is not sacrificed.

The advantages of plough grinding are as follows:—

1. The tapered points facilitate the untangling of the fibers and help to prevent and remove neps.

2. Plough ground wire strips more easily. Make your own test. Wrap yarn on the shaft of a pencil and attempt to remove it. The yarn piles up just as the fibers pile up on non-tapered wire. Make the same test on a tapered shaft and notice how easily the yarn comes off.

3. Plough ground card clothing retards loading, keeping the stock above the knee and in a carding position.

If you would like to see our plough grinding operation, visit us at Fall River, Mass. or Greenville, S. C.

PRODUCTS AND SERVICES

Card Clothing for Cotton, Wool, Worsted, Silk, Rayon and Asbestos Cards and for All Types of Napping Machinery, Brusher Clothing and Card Clothing for Special Purposes. Lickerin Wire and Garnet Wire. Sole Distributors for Platt's Metallic Wire. Lickerins and Top Flats Reclothed.

PRODUCED BY AMERICAN WORKERS

ASHWORTH BROS., INC.

American Card Clothing Co. (Woolen Division)

Fall River*†‡ Worcester† Philadelphia*†‡ Charlotte†‡
Greenville*†‡ Atlanta†‡ Dallas†‡ (Textile Supply Co.)
Los Angeles 62, Calif. (E. G. Paules, Representative)

*Factory †Repair Shop ‡Distributing Point

3 Factories — 6 Repair Shops — 7 Distributing Points

Stitch Setting of Full-Fashioned Hosiery

(Continued from page 136)

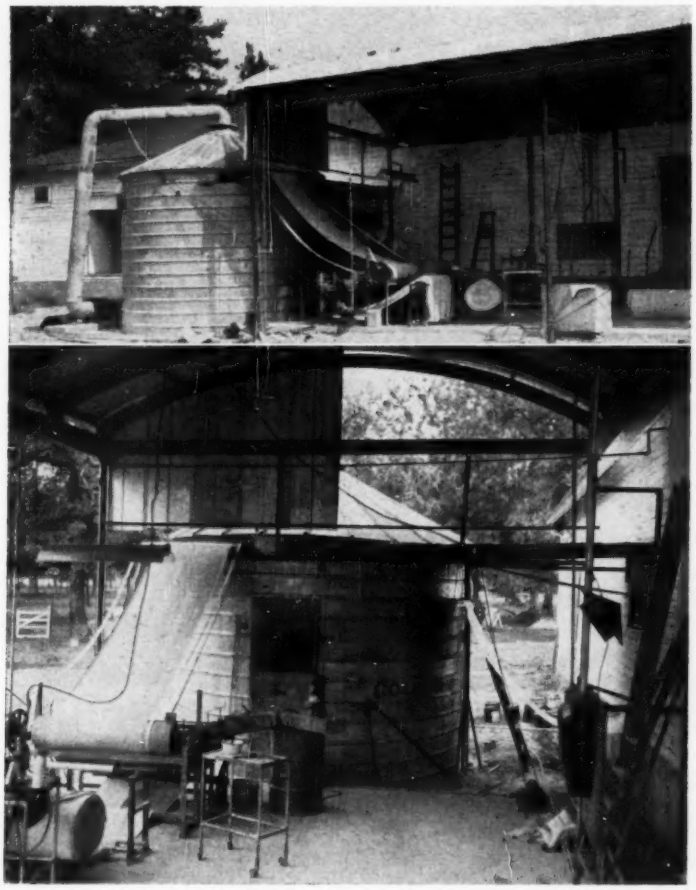
that the box operate at a dry bulb temperature of 205 F and a wet bulb temperature of 188 F. The cycle they recommend is a 60-minute one, with the dry heat on for the first 55 minutes; wet heat to come on after 15 minutes and off after 50 minutes, and the exhaust cycle to be from 50½ minutes to the finish, or 60 minutes. Thus a complete cycle consists of a pre-heating period, a humidifying period, and a drying period. It is during this drying period that any moisture on the stockings and trays is eliminated.

We have found it necessary to make minor variations in these recommended times, but because the changes were made to adjust to local conditions, we hesitate to give you the details, since your conditions may be different from ours. Therefore, we have given the cycle recommended by the manufacturer.

S. BENTON DAVIS

HOW OTHER MEN MANAGE

Tufted Carpets Latexed Outdoors



VETERAN MILLS, Calhoun, Ga., an integrated spinning and tufting plant, has moved its latex application department outdoors and built the dryer shown in the above photographs.

The festoon-type dryer was built from an ordinary galvanized corn crib, and is gas-fired. Cloth enters the dryer from the latex applicator at the left (bottom photo), and proceeds in a clockwise direction and goes in through the side wall of the mill after drying (arrow).

The latexing and drying set-up is used for tufted carpeting.—*Staff.*

A Mill President Offers Some Thoughts on Modernization

EDITOR TEXTILE INDUSTRIES:

Modernization is a never ending job, like a woman's housework. Mill methods and equipment cannot be allowed to grow stagnant; personnel, particularly supervisors, cannot be allowed to go to sleep because their job has possibly been made easier.

If modernization results in upward adjustment of a work load, the change cannot be installed suddenly. The complete shift from old to new in a textile mill department must be done a little at a time. If it's a new spinning expedient, install it gradually, on one frame at a time; let spinners get used to it. In this way employees will grow into the new equipment and work assignment. Remember: you are dealing not only with a spinning frame but with people; they are emotional and have varying capacities for learning.

In deciding about the wisdom of making an investment in new equipment, a good rule to follow involves determining how long it will take the equipment to pay for itself. If, through cost savings, the machine will be paid off in less than two years, buy it—you will pay for it whether you have it or not.

A MILL PRESIDENT

because it's
always uniform . . .
and backed
by Keever service

VICTOR Mill Starch

A KEESTAR KEE PRODUCT

is the weaver's friend

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Charles C. Switzer, Vice President
TEXTILE SALES DIVISION
1200 S. C. NATIONAL BANK BLDG.
GREENVILLE, SOUTH CAROLINA

Tool Speeds Harness Wire Bending

This item was submitted in a Kink Contest.

EDITOR TEXTILE INDUSTRIES:

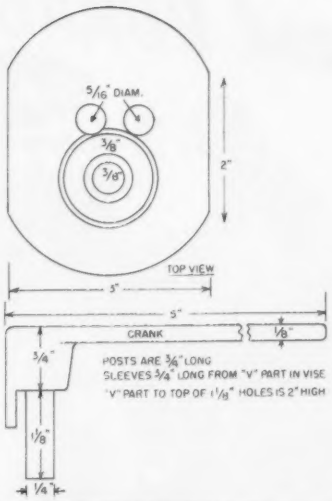
Many times when styles were changed from four-harness weaves to sixteen- and twenty-harness weaves, we had to make up harness mounts. Consequently, we found that bending wire with pliers was slow and laborious.

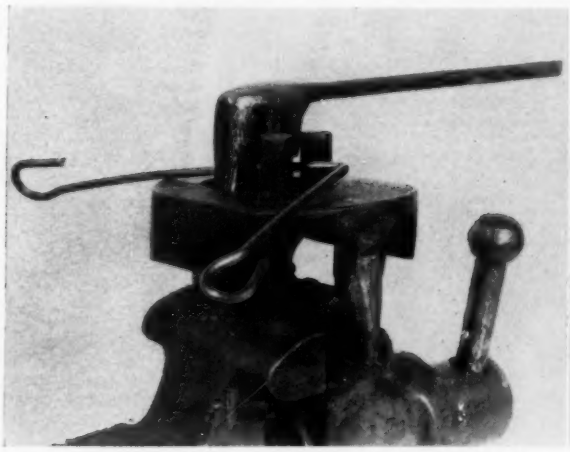
The tool shown in the accompanying illustrations was made from a part of a weight lever ratchet and has a V-shaped piece of metal, with sleeve attached, welded on bottom of ratchet so the tool may be held in a vise. The tool may be made larger or smaller according to the size of the wire used for mounts.

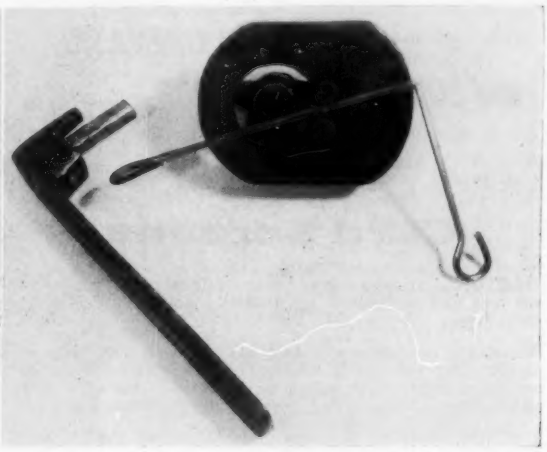
The wire is put between two posts, and the end is shoved through the small projection on the turning handle which pulls the wire through and makes a hook as shown. The handle is then swung around the other way to put crimp in back of hook and straighten it up.

This tool is handy to keep on a fixer's bench. When mounts break, the fixer can easily and quickly make another hook.

CONTRIBUTOR No. 8599



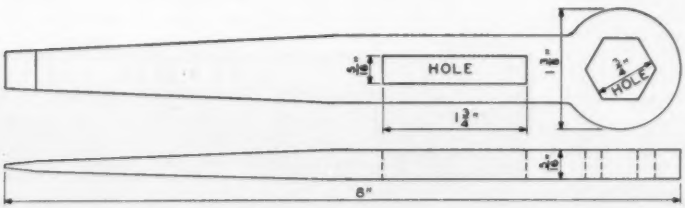




Warp Wrench Is Handy At Tying-In Machine

EDITOR TEXTILE INDUSTRIES:

The accompanying illustration shows a warp wrench which we have developed and found very useful for a tying-in machine operator's helper in taking off and putting on warps in a hurry.



The slot in the handle is for tightening or loosening the thumb nut without scraping your knuckles on the stop motion. The ¾-inch box wrench on the end is for loosening or tightening the nut on the beam lock cover. The screw driver-like point is for prying up stop motion hooks.

CONTRIBUTOR No. 8824

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Dynamically balanced for better performance—reduce vibration to an absolute minimum.

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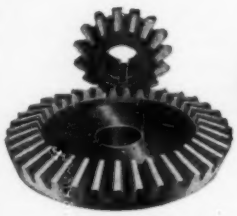
Top Combs, Half Laps and Winder Guide Combs precision-rebuilt of top quality materials to manufacturer's standard specifications. Imported English needles of tempered high-tensile steel used exclusively.

GEARS TO YOUR SPECIFICATIONS

BY FERGUSON

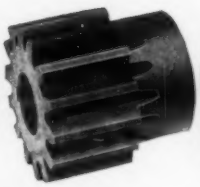


BEVEL GEARS & PINIONS

STEEL PINIONS

SPUR GEARS

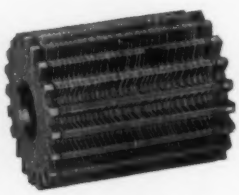
ROLLER CHAINS & SPROCKETS



BAKELITE GEARS

SILENT CHAINS & SPROCKETS

WORMS & WORM GEARS



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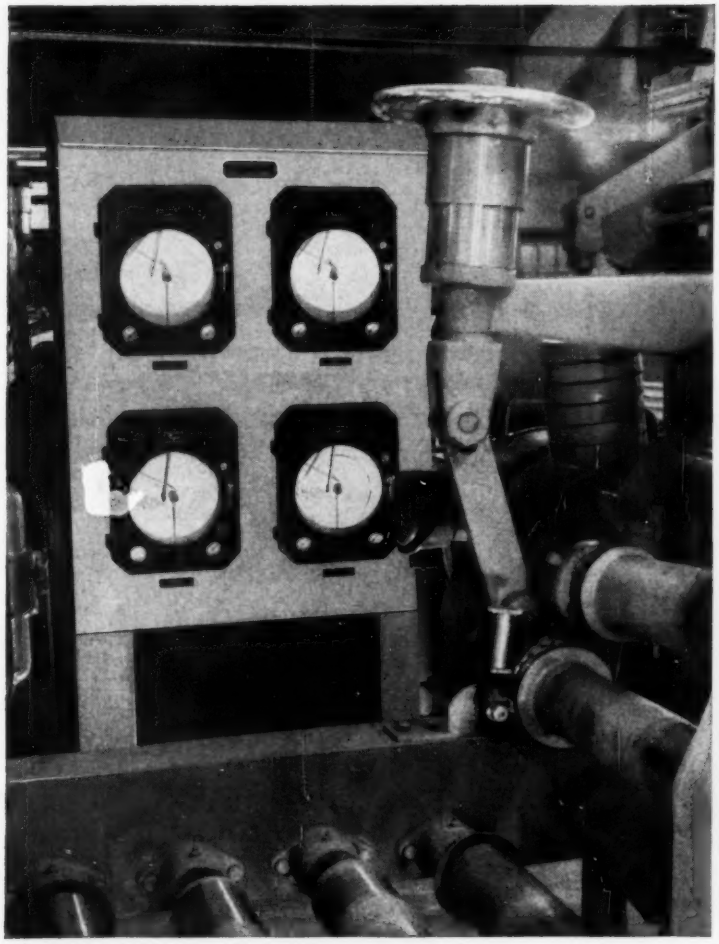
MEMBER AMERICAN GEAR MANUFACTURERS ASSOCIATION

TAYLOR CONTROLS INSURE BETTER MERCERIZING AT DAN RIVER MILLS

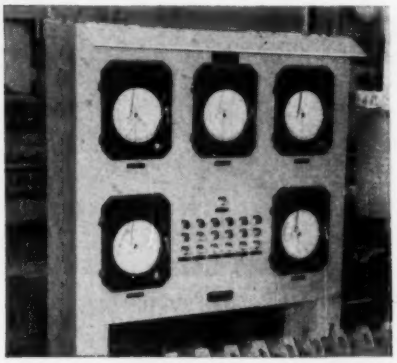


Picture shows two single duty Recording Temperature Controllers and two Flow Controllers. Together these instruments control the flow and temperature for the wash boxes.

AT Dan River Mills Inc., Danville, Va., they mercerize fancy dress goods, from tissue cloths to heavy rainwear, and they rely on Taylor instruments to control all three stages of this complex operation.

Close, automatic temperature control is all important in the processing of today's synthetic fabric blends, as is accurate twaddle control. In addition, Squeeze Roll Pressures must be accurately maintained and caustic concentration and level controlled. (Pictures show portion of control system).

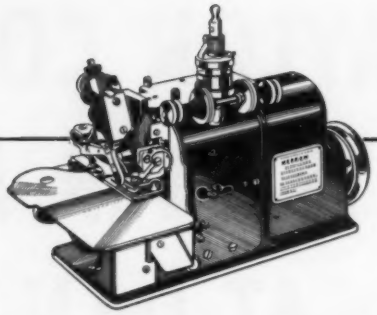
Dan River is proud of the results it's giving them, and we're proud to have a hand in the production of such fine materials. Maybe you have a similar problem, or perhaps you only need one simple instrument. In either case your Taylor Field Engineer will be glad to advise you. Or, if you prefer, write Taylor Instrument Companies, Rochester, N.Y., or Toronto, Canada.



The Tenter washing system panel shows four Flow and Temperature Controllers—one for each section. Alarm system warns operator should flow become inadequate. Center instrument is a Vacuum Recorder.

Taylor Instruments MEAN ACCURACY FIRST

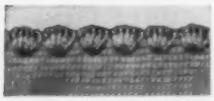
MERROW MACHINES
FOR HIGH PRODUCTION



- OVEREDGING
- OVERSEAMING
- HEMMING
- SERGING
- SHELL STITCHING
- BUTT SEAMING
- CROCHET STITCHING
- SHIRRING WITH OVERSEAMING

"MERROWS" are extensively used in the manufacture of:

LADIES' SLIPS	INFANTS' WEAR	WORK GLOVES
PANTIES AND BRIEFS	WASH CLOTHS	CHILDREN'S CLOTHES
CORSETS AND GIRDLES	HANDKERCHIEFS	TROUSERS
ELASTIC KNIT ARTICLES	PILLOW CASES	LADIES' HOSE
SWEATERS	BATHING SUITS	SKI OR LOAFER SOCKS
ATHLETIC SHIRTS	BLANKETS	ANKLETS—ATTACHING TOPS
POLO SHIRTS	SILVER CASES	LAUNDRY AND FRUIT BAGS
PAJAMAS	AND NOVELTIES	PIECE GOODS



We will be glad to demonstrate the work of these machines on your own material.

TRADE MARK REG

The **MERROW**
MACHINE COMPANY

ESTABLISHED 1838 INCORPORATED 1894

2805 LAUREL STREET•HARTFORD•CONN.

10,000,000 CARDING POINTS NEED PERFECT GRINDING ROLLS

THE CARD-GRINDING SPECIALISTS
DRONSFIELD'S

TRAVERSE WHEEL GRINDER No 120

SOLID GRINDING ROLL No 112

Sole Agents for Dronsfield's Machinery:—
John Hetherington & Sons, Inc.,
N. Marietta St. Ext., Gastonia, N. C.

DRONSFIELD BROTHERS LTD. · OLDHAM · ENGLAND

Check your rings before your rings check you!

One way to insure smooth running work is to plan replacement of worn rings a little before they become troublemakers. A ring check-up is a good way to start the New Year right. Your DIAMOND FINISH man will be glad to help.

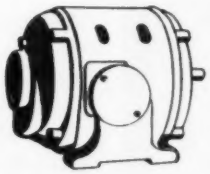
WHITINSVILLE (MASS.) SPINNING RING CO.

DIAMOND FINISH

Makers of Spinning and Twister Rings since 1873

Rep. for the Carolinas: W. K. SHIRLEY, 25 Oak St., Belmont, N. C.
Rep. for Ala., Ga., & Tenn: H. M. JACKSON, 216 Longview Dr., Jefferson, Ga.

New Oakite Safety Solvent Cleans without Water



Wherever water-base detergents or water rinses present a serious rust problem try Oakite Composition No. 116. It's a completely safe (flash point 234 deg. F. C.O.C.) cold-cleaning material that requires no rinse. When brushed or sprayed on surfaces and allowed to penetrate for a few minutes, its powerful emulsifying action quickly dissolves grease, oil and other soils. A quick application of pressure air removes all traces of the loosened dirt and grime. For further details, write Oakite Products, Inc., 42 Rector St., N. Y. 6, N. Y.

SPECIALIZED INDUSTRIAL CLEANING
OAKITE
MATERIALS · METHODS · SERVICE
SCIENCE

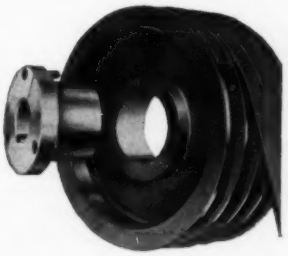
Technical Service Representatives in Principal Cities of U. S. and Canada

The adjustable-speed wedgbelt drive is a Combination...

... of American Adjustable-Diameter Sheaves, allowing stepless speed variation by internal change of pitch diameter of the sheave. Simultaneous flange movement keeps belt alignment constant. Exclusive *double-taper* hub locks flanges in position, locks sheave tight to shaft ... assures positive speed control.

... of American Wedg-Tite Bushings with exclusive *steeper taper* for fast installation and easy removal, uniform compression, positive alignment, and maximum clamping action on the shaft.

... of American Wedgbelts, mold-cured to vary less than ¼ of 1% in length, with strict uniformity in taper, thickness and width. Dacron* cords in Super-Service Wedgbelts are 2½ times stronger than rayon, withstand shock loads and high starting torques.



... of American Wedg-Tite Companion Sheaves, precision-matched to the same taper of the bushing, the exact sidewall angle of the belt. Machined to a satin finish, with accurate balance and concentricity, they lower frictional power-loss, increase plant efficiency.

THE RIGHT COMBINATION FOR MAXIMUM VARIATION OF MACHINE SPEEDS

*Reg. TM. E. I. DuPont de Nemours & Co., Inc.

The American Pulley Company
4232 Wissahickon Avenue
Philadelphia 29, Pa.

TECHNICAL BULLETIN ON *UVERSOFT* "D"

Send me technical information on Harshaw Uversoft "D"

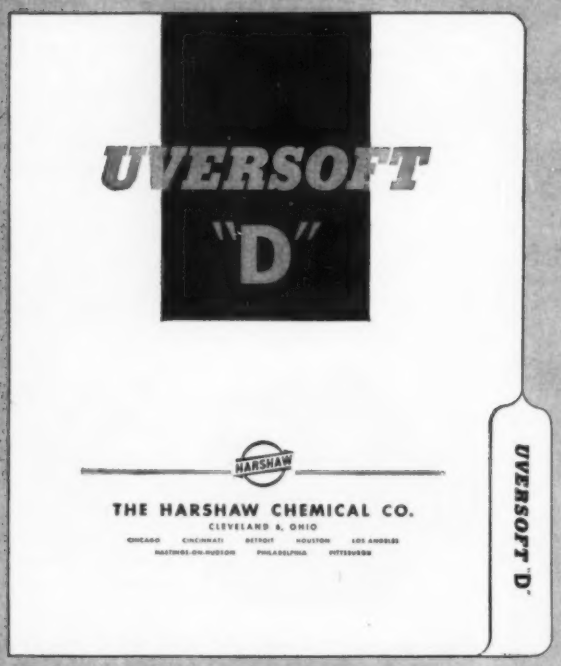
My Name_____

Company Name_____

Street Address_____

City_____ Zone____ State_____

yours for the asking



Imparts Soft Hand With Little Reduction In Moisture Absorbency

UVERSOFT "D" is a cationic surface active agent which produces a full, soft hand with little, if any, reduction in moisture absorbency of the TREATED material. It can be exhausted from a long bath, and has an excellent retention in an aqueous system. UVERSOFT "D" provides a maximum economy in application and use.

UVERSOFT "D" is an outstanding anti-static agent. It should be considered for situations where the accompanying softening action is not objectionable.

Send for folder containing complete technical information.

THE HARSHAW CHEMICAL CO.

1945 EAST 97th ST., CLEVELAND 6, OHIO

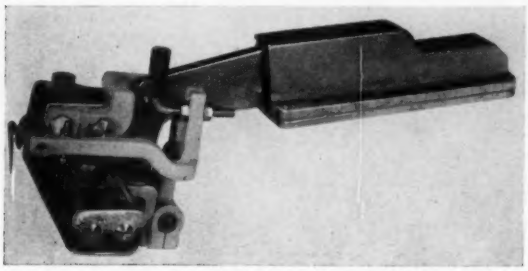
NEW EQUIPMENT PARADE

Machines and Equipment . . . Supplies and Services . . . Dyes and Chemicals . . . Books

Make Better Selvages with this Attachment for Temples

The #3 Draper Selvage Post Attachment is an improved mechanism for producing better selvages on many weaves. It is available for any two- or three-roll adjustable top Draper temple.

The mechanism is mounted on a torsional rubber bearing located below the cloth line. This feature, coupled



with rugged construction, virtually eliminates wear on component parts. No lubrication is required, therefore danger of oil stains on cloth is greatly reduced.

Longer life and lowered maintenance costs are assured because of the construction of this mechanism.

Draper Corp., Hopedale, Mass.

Do you want more data? Write ☁ or use card on page 163; list A-101

Exact Sliver Yardage Control for Drawing Frames

The Saco-Lowell Predetermined Yardage Counter—a precision-made assembly consisting of (1) a new yardage counter with knock-off, (2) a new-model target stop motion, and (3) a Veeder-Root hank clock with horizontal drive shaft—is now available for all mills wishing to set up precisely controlled doffing cycles on their drawing frames.

The new assembly will coil exactly the same yardage of sliver into all draw cans so long as all the yardage counters are set the same. Installation of the new unit is easily made on all drawing frames.

The yardage-control assembly operates mechanically. Setting of the yardage desired in the cans is done by (1) snapping up the face of the predetermining yardage counter, (2) disengaging the smaller setting wheels from the larger yardage-reading wheels by moving them slightly to the right, and (3) setting the small wheels to read the same as the yardage desired in the cans. The thumb screw on the outside of the counter is used to reset the wheels after a production run.

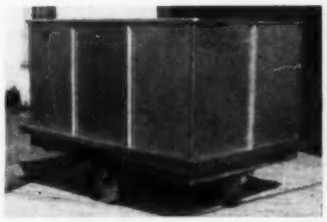
As soon as the actual yardage run equals the preset yardage, a trip lever extending back from the inside of the counter is forced upward which changes the position of the target stop motion's two knock-off levers so that the doffing signal is released. Release of the doffing signal simultaneously releases the drawing frame's knock-off lever extending toward the back of the frame. The other end of this lever engages the striker dog at the back of the beam, thus stopping the frame through the rocker arm crank shaft.

Saco-Lowell Shops, 60 Batterymarch St., Boston, Mass.

Do you want more data? Write ☁ or use card on page 163; list A-102

Truck Aids in Wet Processing of Wide Cloth

For use in the wet processing of wide cloth is a truck which measures 70" x 46" x 39" and is completely snag-free.



All edges of metal are hidden both inside and outside above the base frame. Wooden bumper is replaceable and affords maximum protection of the equipment. Running gear consists of two 12" center loaded wheels and one 8" swivel caster at each end with sealed wheels.

Bottom of truck is perforated to allow for drainage and to facilitate in washing when color is changed.

Kennett Equipment & Machinery Co., Kennett Square, Pa.

Do you want more data? Write ☁ or use card on page 163; list A-103

Versatile Outerwear Knitter

A wide range of outerwear fabrics—including those suitable for ladies' coats, skirts, and dresses; sport coats and fancy vests for men; and children's garments—can be produced on the Stibbe-Berridge Model 99-12 circular knitting machine. The loop formation keeps the fabrics light in weight for summer wear but retains warmth for the winter. When rubber thread is incorporated, attractive swimwear and sun suit fabrics can be produced.

Two-, three-, or four-color Jacquard, interlock, eight-lock in 2 x 2, 2 x 1 or other combinations, tuck stitch, ripple stitch, and pique come within its scope; and to increase the variations on these even more, two-color striping is available.

The designing system is extremely simple in operation, affording an easy and rapid change in pattern. Many designs may be obtained without the use of the control drum.

Other features are: fabric inspection light, electronic stop motion which efficiently detects empty bobbins,

A NEW KIND OF CREEL - *LINT FREE CREEL*

This sparkling, mirror finished aluminum creel is without one single flat surface —on which lint can accumulate. Slubs are virtually eliminated.

Throughout the entire creel, the proven air-foil design is employed. There are no flat boards to obstruct air passage at any point. As a result, a full volume of air sweeps through the creel, cleaning all surfaces constantly and thoroughly.

Reports from mills state that the installation of this equipment **lowered cleaning costs 40%.**

This is the creel for you!

The ***LINT FREE CREEL*** is

- ADJUSTABLE— adaptable to any gauge.
- FLEXIBLE— handles small or large packages.
- MOVABLE— fits all frames.

PNEUMAFIL CORPORATION
CHARLOTTE 8, NORTH CAROLINA
Atlanta, Georgia *Needham Heights, Mass.*

PneumaClear
Pneumafil Economizer Unit System
Central Air System
Central Material Recovery System
Lint Free Creel
Pneumastop ®
Pneumacard ®

PRODUCTS OF PROGRESS >>

PNEUMAFIL ®

loose ends, broken needles, and closed latches, epicyclic gearing to hold dial in position.

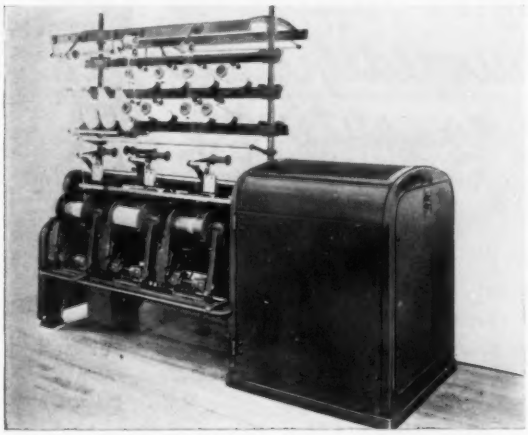
This machine is also built as a 24-feed machine but without striping units and is known as Model 99-24. Built in 30" diameter, 10 x 10, 12 x 12, 14 x 14, and 16 x 16 needles per inch.

Wildman Mfg. Co., Norristown, Pa.

Do you want more data? Write ☁ or use card on page 163; list A-104

Economical Way to Make Multiple Ply Yarns

The Whitin "Spoolmatic" redraw doubler, an entirely new machine, opens up to a large segment of the industry



the highly economical method of uptwisting multiple ply yarns.

This uptwisting technique, which produces extremely large knotless packages made at very high production rates on the Whitin "Cable-King" uptwister, has been used for many years by a limited number of mills. Now, when this new redraw doubler is used in conjunction with the Whitin "Cable-King" uptwister, any mill now producing or interested in producing many types of these multiple ply yarns can adopt this economical and profitable method of manufacturing these yarns. Such yarns would include: rayon or nylon tire cord, cotton or synthetic tufted rug yarns, wool and synthetic yarns for woven carpets, duck yarns, or other heavy industrial yarns using natural or synthetic fibers.

The machine is designed to accommodate a wide variety of supply packages mounted either on a machine-supported creel or on a separate floor creel. Supply packages can be in the form of conventional twister spools, cones, Barber-Colman packages, or large packages made on ring spinning frames.

With this redraw doubler mills producing high ply yarns by the ring twisting method will be able to double several ends on a single spool, eliminating the high creel and the necessity for using expensive equipment on the twister required to detect broken ends.

The "Spoolmatic" is an electronically controlled machine designed for winding one, two, or more ends of yarn onto a double head spool to produce a package which can be used as a supply package on the Whitin "Cable-King" uptwister or in the creel of a regular ring twister.

The electronic controls detect individual yarn breaks, stopping the affected package instantly and allowing the operator to replace the broken end with a minimum of difficulty and loss of time. An electric, full package determinator actuates the knock-off motion, stopping each individual take-up package when it has reached a predetermined diameter.

The machine is designed to wind onto a double head spool at production rates varying from 100 to 300 yards per minute, depending on the yarn characteristics and the number of ends being doubled. Also depending on the type of yarn used, the take-up package may hold up to 8½ to 9 pounds of yarn, with a maximum diameter of up to 8⅝", and have a maximum traverse of 9". The machine can be easily adjusted to vary the angle of helix wind on the spool.

The "Spoolmatic" is double-sided and may have from a minimum of six to a maximum of forty-eight individual take-up positions in multiples of six. It also has the feature that, subject to the forty-eight position maximum, customers may add more positions in multiples of six, anytime in the future.

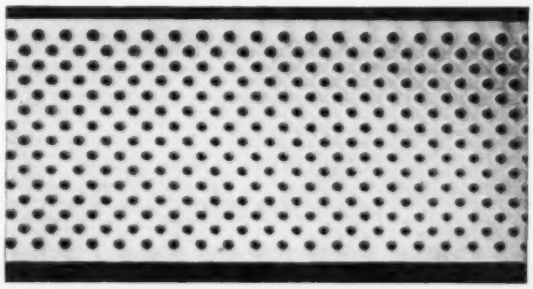
Whitin Machine Works, Whitinsville, Mass.

Do you want more data? Write ☁ or use card on page 163; list A-105

Steel Fillet for Loom Roll Surfacing Features Controlled Break-Through

Wissco steel fillet for loom roll surfacing is manufactured to exacting specifications by means of a controlled break-through process to give a uniform "grater" surface that holds woven materials securely and evenly. Take-up is smooth and even, and pulled threads, tearing or scarring of the fabric are eliminated.

Available from stock in cold rolled or tinned steel in a complete range of types and sizes to meet any specifica-



tions, the fillet is especially designed to give longer life with less downtime and low maintenance cost.

Uniform strength throughout the entire length of the fillet is provided—no fillet breaks at weak spots.

Wickwire Spencer Steel Div., The Colorado Fuel and Iron Corp., 575 Madison Ave., New York 22, N. Y.

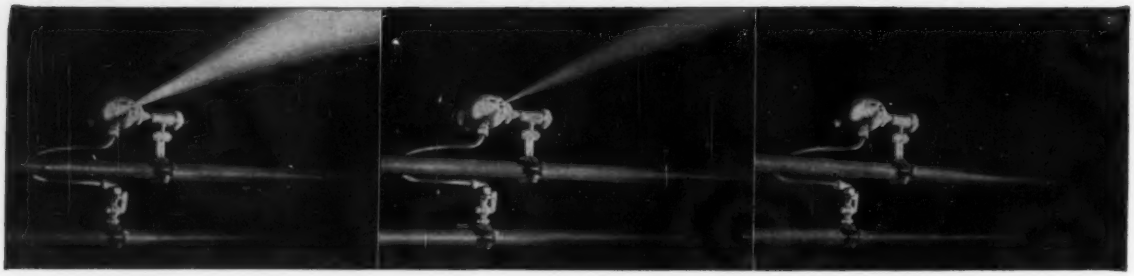
Do you want more data? Write ☁ or use card on page 163; list A-106

Hydraulic Cloth Roll Lowering Table

Transfer of heavy rolls of cloth from processing machines to the floor or transfer trucks becomes a simple and safe operation when the new "Murco" hydraulic roll lowering table featuring a receiving bridge is utilized.

Use of the table not only prevents roll damage but saves time and money too. There is no bending or breaking of winder shafts, as the winder shaft is never used as a lifting arbor. Need for overhead hoist arrangements is also eliminated.

The machine operator simply lowers the bridge receiv-



"I want my humidifier heads to keep running whenever humidification is needed," says a mill executive —

Good idea, of course. That's why he likes GRADUMATICS.

Output is controlled automatically to maintain a constant humidity at all times.

Operating with both air and water under pressure, GRADUMATICS are more efficient than gravity type atomizers. Use less air. "Atomization" of moisture is more complete, resulting in quicker evaporation, and longer "blow" of the resulting *vapor*. Excellent performance at all evaporative outputs from 2 to 16 pounds of water per hour.

No other system approaches the GRADUMATIC in uniformity of resulting humidity and in economy of operation at high capacity. Good economy and even better spray quality when operating at low evaporative output.

There are other advantages too. For example the GRADUMATIC head is made non-adjustable. No guess-test required. You *know* it's right. And with both air and water under pressure, frequent self-cleaning is quite unnecessary.

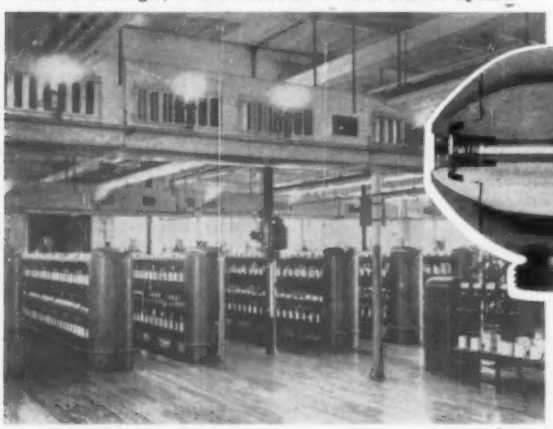
Simple? Just look at the few parts. Repairs are a cinch, and seldom needed.

Parks-Cramer Company

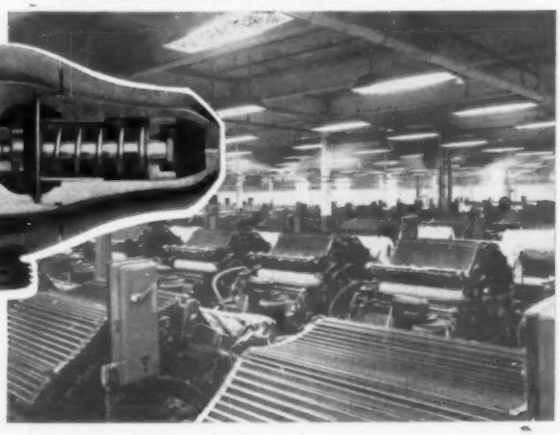
FITCHBURG, MASS. CHARLOTTE, N. C. ATLANTA, GA.

Humidifying and Air Conditioning Since 1904
Traveling Cleaner Systems Since 1926

With Airchanger, or as boosters for Central Station System



For direct humidification in all textile mill departments



ing section right up to the processing machine, rolls the cloth onto the table, and lowers the roll to the floor or skids.

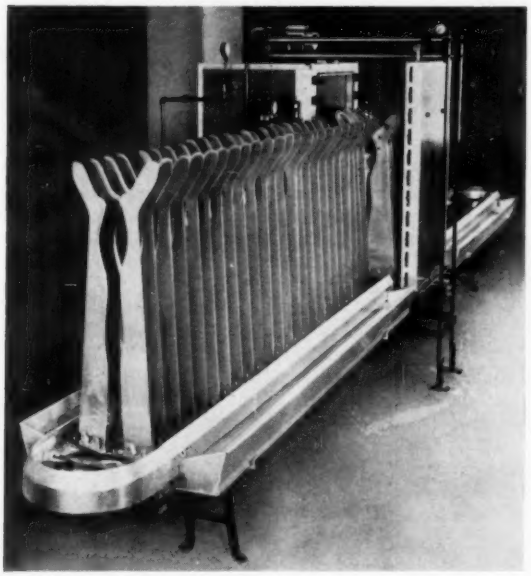
Rigid construction positively prevents movement when table is loaded. Equipped with either hand operated pump, motor operated pump, or air pressure operated oil reservoir, the table is made in sizes practical for any normal size cloth roll and available in various lengths.

D. J. Murray Mfg. Co., Wausau, Wis.

Do you want more data? Write ◂ or use card on page 163; list A-107

Double F-F or Seamless Hose Finishing Production on Machine Requiring No More Space

A new hosiery finishing machine that doubles production without increasing floor space has been developed. Called the AD-96, it is a two-operator machine for pre-



boarding and finish boarding both seamless and full-fashioned stockings.

Double tracks on each side of the machine hold forms upright for dressing or stripping. The machine has a total of 96 boards.

Operators work facing each other. Forty-eight forms enter the cabinet as the Turbo spiders close up like an accordion. Operators then move to the other side of the machine to strip the 48 forms that have just left the cabinet.

Turbo Machine Co., Lansdale, Pa.

Do you want more data? Write ◂ or use card on page 163; list A-108

New 21" x 84" Beams Offer Definite Advantage to Tricot Knitters

Now available to the tricot trade are knitting sets on 21" x 84" beams. The advantages realized on trial shipments to date indicate improvements on three counts: simplified handling, improved quality, and increased production.

Handling is simplified since this bigger beam makes for fewer beams to handle per set. This makes for easier loading and threading up of machines.

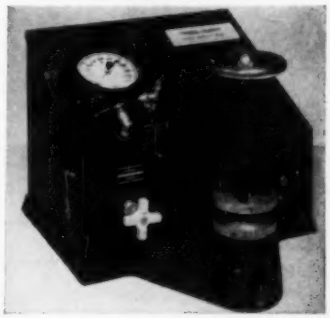
Quality is improved by the reduction of flanges. The flanges are reduced by eight when compared with 21" x 42" beams. They are reduced by 16 when compared with 21" x 21" beams.

Flange reduction means less possibility of fabric defects derived from high or low edges which produce streaks; broken filaments and ringers caused by flanges or edge ends (which in turn cause drag marks); and high and low cover bands resulting from varying beam circumferences, tapered beams or high or low edges.

Celanese Corp. of America, Textile Div., Charlotte, N. C.

Do you want more data? Write ◂ or use card on page 163; list A-109

Fabric Burst Tester



A burst tester, identified as Model TE-5761, was developed for burst strength testing of textile fabrics, paper and paper products, and plastics in sheet form, up to 600 psi.

The tester features a complete hydraulically operated system energized by a ¼ hp, 110-125 V, single phase, 60 cycle electric motor. A safety control is incorporated which prevents damage of the unit even when the operating handle is held in the actuating position after material sample burst.

The burst indicating gauge records the maximum burst pressure required and additionally establishes a residual pressure reading to allow determination of the true burst value of the test sample.

Test and Ground Handling Equipment Div., Pacific Airmotive Corp., 2940 N. Hollywood Way, Burbank, Calif.

Do you want more data? Write ◂ or use card on page 163; list A-110

High Production Precision Winders

Outstanding features of the Sahm "Bikomat" precision cross winder, a semi-automatic machine with constant spindle speed or with constant yarn speed, for natural, artificial or synthetic yarns are:

1. High winding speed—a camless traverse motion permits over 400 double traverses per minute (5.9-inch traverse);
2. Greater package capacity of the spools;
3. Differential diamond winding with precision adjustment (while the machine is in operation) of the uneven ratio of spindle revolutions per double traverse desired, by simply turning a screw;
4. Novel thread guide permitting positively stretchless winding of yarn of any size at tensions less than one-tenth of the denier, making it possible to wind packages perfect for dyeing purposes and having a Shore hardness of only 20-25 degrees.
5. Independent electric drive of each winding unit—

Stainless Steel Poteyes

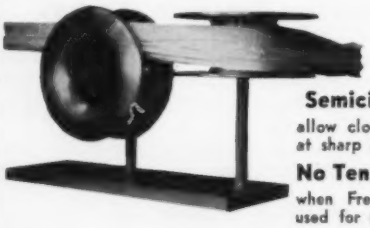
For Long Heavy Duty

Light—can be adapted to present brackets or welded in any position

Smooth—slickness reduces friction and wear

Safe—won't crack or break in long, heavy service

Economical—no maintenance, fully resistant to wear and chemical action



Semicircular Flanges allow cloth to enter or leave at sharp angles

No Tension or Twisting when Free Wheeling Poteyes used for sharp turns and long runs

Ask for prices

Originator of Modern Expanders

Leader in Cloth Handling Equipment

MOUNT HOPE MACHINERY COMPANY

15 FIFTH STREET, TAUNTON, MASS.
Southern Repair Shop—Charlotte

electric speed control to maintain a constant winding speed is available on request.

Cones, pineapples, cylindrical cheeses, and dyeing packages may be produced on the machine.

Also available for precision winding of sewing and insulation threads and heavy yarns are the Sahm "Makro-Pramat" and "Makromat" winders. The first is a semi-automatic machine with constant spindle speed for large packages; the latter a semi-automatic machine for constant yarn speed and also adjustable for constant spindle speed.

Alfred Hofmann & Co., 629-635 Fifty-ninth St., West New York, N. J.

Do you want more data? Write ◂ or use card on page 163; list A-111

Surfactant for Cotton, Wool and Synthetics

A completely new surfactant for cotton, wool, and synthetics processing that combines the advantages of anionic soap and nonionic detergents while inheriting none of their disadvantages was announced recently.

Faster desizing is obtained with Sandopan DTC because of its rapid wetting and penetration properties plus its detergent action in subsequent washings.

In kier boiling, the new surface active agent provides (1) faster wetting; (2) uniform distribution of caustic soda; (3) rapid hydrolysis of wax, protein, and pectin; (4) no redeposition of impurities when kier is drained or in rope washer after J-box; (5) whiter goods; and (6) outstanding absorbency.

Sandopan DTC saves bleaching material and at the same time gives a faster, more uniform bleach.

Scouring synthetics with Sandopan DTC has proved excellent for removal of oil and graphite from tricot, circular knit goods, and "Helanca" yarn fabrics.

Crease and abrasion resistance of resin finished goods is raised with Sandopan DTC.

Sandoz Chemical Works, Inc., 61 Van Dam St., New York 13, N. Y.

Do you want more data? Write ◂ or use card on page 163; list A-112

New Traveler Cleaner has Several Advantages

The Robbins Adjustable Traveler Cleaner—a stronger, cleaner-running, and more versatile replacement item than the old pin-type cleaner—has been developed. It is now generally available for mill use.

The new cleaner consists of a practically indestructible steel stamping, in the shape of a right angle. This stamping is fastened to the ring holder by a small screw, and is easily adjusted for all numbers and circles of travelers.

The cleaner can be assembled on almost any conventional holder for spinning rings. Assembly at the mill requires only the drilling of one small hole in the desired location, and the use of a self-tapping screw to fasten the stamping to the ring holder. The drilling can be done without removing the ring or holder from the rail, so that the application does not involve replumbing of spindles.

The new cleaners are made in three sizes: 9/32", 11/32", and 13/32". A complete unit consists of a stamping and a screw.

Saco-Lowell Shops, 60 Batterymarch St., Boston, Mass.

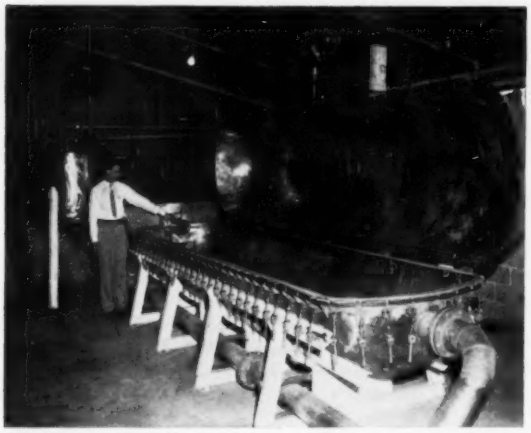
Do you want more data? Write ◂ or use card on page 163; list A-127

Pressure Dyeing Machine for Tufted Carpeting Improves Quality, Costs Less to Operate

By using a pressure type machine recently developed for dyeing broadloom tufted carpeting, the risk of abrasions is eliminated.

Briefly, here is how a carpet is dyed in the huge, coffin-shaped, enclosed tank:

The broadloom to be dyed is wound onto a beam with a perforated tube as its barrel or core and lowered into



Pressure type machine open to receive carpet wound on beam for dyeing.

Operator winding carpet on beam (left) and placing beam in machine (right).

the dye machine. The hollow perforated tube forming the beam barrel is then connected to a tube through which dye liquor is pumped from the chemical tank. The lid is then closed and tightly clamped down.

A pump driven by a 40-hp motor pumps the dye liquor into the perforated tube at a rate of 1800 gallons per minute so that it is forced by pressure through the roll of broadloom, and after a complete cycle is pulled back through the carpeting from the reverse side. Pressure per sq in. of carpeting is approximately 15-20 psi.

Ten-Tex Corp., 1207-09 East 23rd St., Chattanooga 8, Tenn.

Do you want more data? Write ◂ or use card on page 163; list A-113

Hibulk Acrilan Staple and Tow

Now available commercially are 2.5 denier Acrilan Hibulk staple in all commercial staple lengths and 2.5 denier Hibulk Acrilan tow.

Acrilan Hibulk staple may be processed on the cotton system, the worsted system, and the woolen system in blends with regular Acrilan staple or even with other staple fibers.

Yarns containing this fiber are being used in knitting mills, particularly for production of sweaters; also jersey fabrics for ladies' wear. Weaving mills are using these yarns to produce unusual fabrics such as puckers, crepes, plain-woven novelties, etc.

The Chemstrand Corp., Decatur, Ala.

Do you want more data? Write ◂ or use card on page 163; list A-114

Metal Detector for Fabric Inspection Electronically Spots Specks Smaller Than a Dot

A new type of RCA electronic metal detector, so sensitive that it will spot metallic specks smaller than a typewritten dot, has been developed for continuous inspection of textile fabrics in production.

Designed to protect both product and production equipment, the electronic inspection machine provides continuous inspection of strip material traveling at speeds of from 10 to 1000 feet per minute. It features adjustable sensitivity, can be pre-set to detect metal particles as small as 0.039 inch even though deeply embedded in the material under inspection, and reacts to all types of metals (magnetic and non-magnetic). The unit can be installed so that, upon detection of tramp metal, it will trigger any one or combination of alarm systems—stop the production line, sound a horn or bell, activate a warning light, or mark the contaminated area with chalk or dye.

Important savings in materials and equipment, plus greater efficiency in operations, are benefits to be derived from the equipment. By reducing equipment damage, the metal detector can be a factor in reducing maintenance costs and increasing production. It can be expected, also, to increase the service life of production machinery and to virtually eliminate the hazard of personal injury from tramp metal.

The metal detector features an inspection aperture 60 inches wide and 1⅛ inches high, through which passes the material to be checked. It utilizes specially designed coils to produce a high-frequency electromagnetic field. Tramp metal in the material under inspection distorts the field. Field distortion, in turn, creates an electrical signal which is fed to a control unit, amplified, and used to trigger alarm system.

Radio Corporation of America, Industrial Marketing Dept., RCA Bldg., 30 Rockefeller Plaza, New York 20, N. Y.

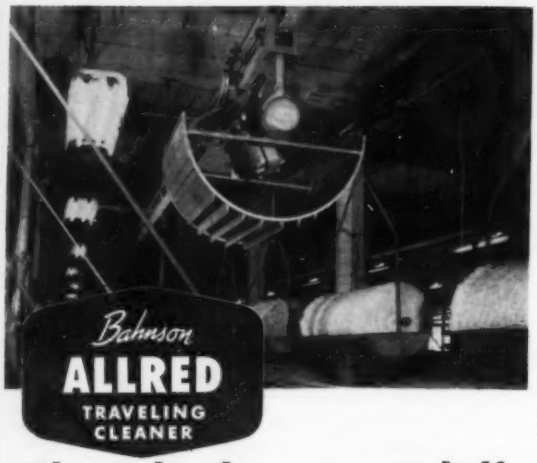
Do you want more data? Write ◂ or use card on page 163; list A-115

Automatic Multi-Color Circular Printing Machine for Hose

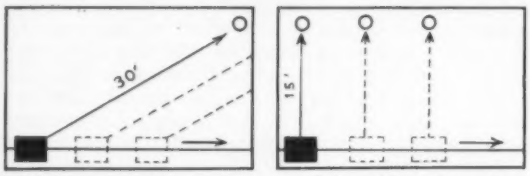
With a new automatic multi-color circular printing machine, the printing of the stockings or socks may be carried out by the patented circular printing process, automatically and in one single operation, with three or more color furnishing mechanisms.

This process permits the production of any conceivable, independent, and continuous design. All stockings or socks are printed with the highest precision—i.e., the individual patterns applied fit perfectly into each other.

All kinds of materials and all types of stitches can be printed without difficulty. Even ribbed or 1/1 double-



Blows head-on at one-half the range of other cleaners . . . for better cleaning!



Other cleaners strike objective at angles from greater distances.

The Bahnson-Allred strikes objective directly at ½ the distance of other cleaners.

Blows Perpendicular to track to deliver direct, head-on air blasts. This special construction enables the Allred to clean more thoroughly with continuous head-on air blasts from ½ shorter range than other cleaners.

Cleans at Less Cost with greater efficiency. The Allred needs only a ⅓ horsepower motor for effective air delivery. (Available also with 1 H.P. motors for special applications.) Its head-on air blasts have been test-proven to clean more effectively than other approaches.

Patented Index Feature progressively adjusts the fan to clean selected areas in a pre-determined pattern. Pattern is easily set and varied for different needs.

Added Advantages. The Allred fan oscillates as it travels along the track to produce a varying angle of blow at each automatically adjusted setting. For further airflow control a U-Shield with adjustable vanes is furnished.

WRITE US TODAY

for detailed information. Ask for Technical Bulletin 21-A

Bahnson
COMPANY
WINSTON-SALEM, N. C.

AIR CONDITIONING • CLEANING • VACUUM COLLECTION

cylinder goods can be printed, because the reverse ribs, too, are evenly penetrated by the dyestuff.

In the consumption of textile printing dyestuffs of highest all-round fastness properties, this machine is extremely economical.

Stockings and socks of all sizes and lengths, from opera hose to infants' socks, can be printed on one and the same machine. For the various sizes, rollers of five different diameters are available; whenever necessary, they can be exchanged within a few minutes. Also the changing of the pattern screens can be effected in a very short time.

The operation of the machine is very simple, and with new operatives only a very short training period is required.

The machine finishes in 8½ hours approximately 120 dozen pairs of stockings.

Keller & Knappich GmbH. Maschinenfabrik, Ulmer Str. 74, Augsburg, Germany.

Do you want more data? Write ◂ or use card on page 163; list A-116

Knotter for Worsted Yarns

Now available through an agent in the United States is the F. K. Fisherman's knotter manufactured by Cook & Co. of Manchester, England. With it the knotting of worsted yarns can be accomplished more efficiently.

Stellite American Corp., 60 East 42nd St., New York 17, N. Y.

Do you want more data? Write ◂ or use card on page 163; list A-117

Instrument Is More Sensitive to Color Differences than the Eye

A new Colormaster Differential Colorimeter, the Model IV, accurately makes color measurements with a sensitivity to color differences exceeding that of the human eye. It measures the color transmission and reflectance of such substances as synthetic fibers, paints, liquid solutions, pigments, and slurries within 0.0001 reflectance units.

Of particular importance in the Model IV Colormaster is the substantial improvement in sensitivity when dark samples are being measured. Other new features include a simplified switching arrangement and an easily read digital reflectance indicator calibrated to 0.0002 reflectance units. A spinning attachment, to permit rotation of samples, is available as an accessory. A scale multiplier, to permit scale expansion by a factor of ten, will be available in the near future.

The Colormaster is especially useful for measuring differences between colors for process control applications. A complete set of color measurements, for example, can be made with the Colormaster in less than thirty seconds.

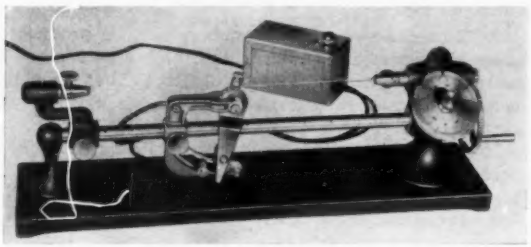
Manufacturers Engineering & Equipment Corp., Hatboro, Pa.

Do you want more data? Write ◂ or use card on page 163; list A-118

Singles Yarn Attachment for Twist Counter

A pendulum attachment may be applied directly to any standard Scott twist counter to give the added facility for analyzing singles twist.

The method of operation is the conventional: A yarn is inserted into a clamp attached to a pendulum. The swing of the pendulum is limited by adjustable stops, and a tension is applied to the yarn before securing the other end



in the head of the twist counter. This tension decays as the twist is removed, so that when all the twist has been removed the pendulum is vertical and tension is entirely absent.

When the twist is put in, in the reverse direction from the original, the tension of the pendulum is re-established, and a light attached to the upper stop indicates when an equivalent tension has been re-applied. This light is mounted in a small box which also contains a transformer for reducing 110 V lighting circuit to the 6 volts used to operate the light.

Scott Testers, Inc., 60 Blackstone St., Providence, R. I.

Do you want more data? Write ◂ or use card on page 163; list A-119

New Direct and Chrome Colors

Several new direct and chrome colors were recently announced.

Lumicrease Yellow EFUL and Lumicrease Orange 3LG pat. have a light fast rating of 7 in both Fade-Ometer and daylight. These new direct dyes are especially recommended for automotive and decorative fabrics.

Metomega Chrome Orange PML has the outstanding light fastness properties of Metomega Chrome Orange ML, but possesses better fastness to cross dyeing and potting.

Omega Chrome Olive GL pat., with a rating of 6 in the Fade-Ometer, 6 to 7 in daylight, is also fast to carbonizing, fulling, cross dyeing, and potting.

Sandoz Chemical Works, Inc., 61 Van Dam St., New York, N. Y.

Do you want more data? Write ◂ or use card on page 163; list A-120

Soil Retardant for Synthetic Carpets

The recent trend towards using increasing amounts of the synthetic fibers and lighter pastel shades in carpets and consequently the need for reducing the rate of soiling have resulted in development of an effective soil retardant, Juvenon Soil Retardant R.

The product acts like "clean" dirt; that is, its colorless, soil-retardant particles occupy sites which would otherwise be occupied by soil particles.

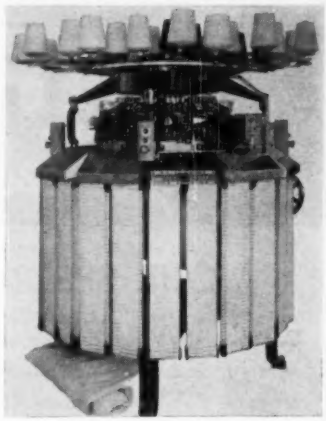
Juvenon Soil Retardant R is a white, thixotropic, aqueous, inorganic dispersion containing 20 per cent active solids. It can be applied by the carpet manufacturer in existing plant equipment or with modifications. It can also be applied by a rug cleaner.

The amount of soil retardant required depends on the fiber, the construction of the fabric, and the method of application.

American Cyanamid Co., Textile Resin Dept., Bound Brook, N. J.

Do you want more data? Write ◂ or use card on page 163; list A-121

Multi-Purpose Circular Jacquard Knitter



The new, fully automatic, multi-purpose Model TJI-12 circular Jacquard transfer (rib) machine was developed for use with all fibers and, particularly, tow-dyed Orlon yarn.

The machine will produce:

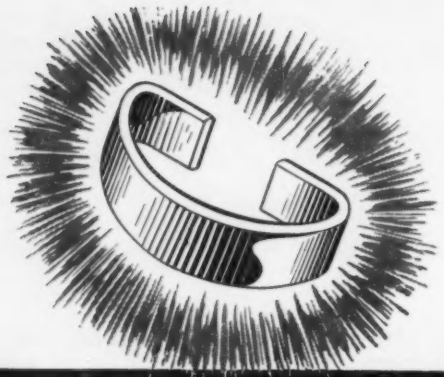
1. Interlock—plain with knit-on 1x1, 2x1 or 2x2 cuff.
2. Interlock with Jacquard designs—with knit-on 1x1, 2x1 or 2x2 cuffs.
3. Plain jersey—with knit-on 1x1, 2x1 or 2x2 cuff.
4. Jersey background—with drop stitch effects and knit-on 1x1, 2x1 or 2x2 cuff.
5. Jersey background—with designs of holes and ribs (by means of selective transfer, using Jacquard pattern mechanisms) with knit-on 1x1, 2x1 or 2x2 cuff.
6. Rib fabrics—with reverse jersey effects and knit-on cuff.
7. Welt fabrics—up to four-color welt design fabrics with knit-on 1x1, 2x1 or 2x2 cuff.
8. Welt fabric—in solid color with knit-on 1x1, 2x1 or 2x2 cuff.
9. Twill or birdseye back fabric—with knit-on 1x1, 2x1 or 2x2 cuff.
10. Simulated 2x2 rib effects can be made in any part of garment.
11. Any of the above in combination with stripes.
12. Many other fancy stitch combinations.

Available in 30-inch diameter and up to 14 needles per inch, the machine is equipped with 12 knitting feeds and eight transfer systems. It is also fitted with 12 double drum automats for individual needle selective Jacquard designs. Each drum of the automat controls 56 levers or a maximum of 112 levers per automat.

The automat mechanism permits accurate and positive needle selection even with the finest cuts; also rapid Jacquard pattern card changes. A new lever design permits quick, easy individual lever replacement.

A separate interlock cam arrangement allows the machine to produce interlock fabric without the use of the Jacquard pattern mechanism.

Automatic lubrication, electronically controlled motorized drive side, electric clutch, four-color yarn changers, automatic electric counter, improved short chain system,



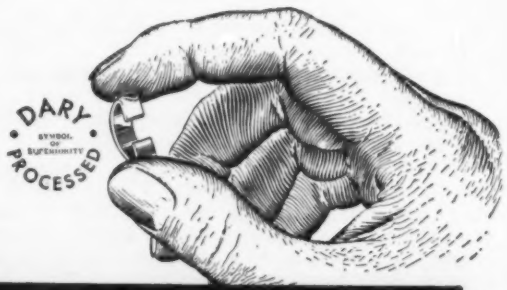
DARY
Ring Travelers

OUR SPECIALTY!

Our specialty is making Dary ring travelers—an item well and favorably known to the textile trade for more than half a century. Though times change, we at Dary hold to one course without deviation. We continue to serve, by pursuing our specialty.

When you need ring travelers, call on our experience to aid your choice. Consult your friendly Dary representative!

Always specify
DARY Ring Travelers



THE DARY RING TRAVELER CO.
TAUNTON, MASSACHUSETTS
LINDSEY I. PHILLIPS, TREASURER, TAUNTON, MASS.
JOHN H. O'NEILL, BOX 720, ATLANTA, GA.
JAMES H. CARVER, BOX 22, RUTHERFORDTON, N. C.
CRAWFORD "JACK" RHYMER, BOX 2261, GREENVILLE, S.C.

automatic master control mechanism, positive action stop motion devices, dogless head construction, and three roller fabric take-up are other features.

Jacquard Knitting Machine Co., Inc., Philadelphia 24, Pa.

Do you want more data? Write ◂ or use card on page 163; list A-122

Finer Top Comb Improves Comber Sliver Quality

A 73-needle-per-inch top comb, which (1) produces a lower nep count and (2) removes a higher percentage of noils than the standard 68-needle comb, has been developed as a replacement item for all Saco-Lowell combers.

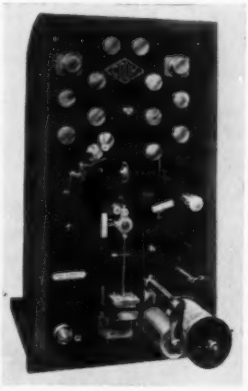
It is designed for mills wishing to obtain for subsequent processing only the highest quality of combed sliver. The new needling is not recommended for mills, satisfied with their present sliver quality, which desire to keep their noil extraction and production rates at present levels.

Yarns made from stock processed through the 73-needle top comb show an improved break factor, with variations in size and strength in every way comparable to yarns processed through the standard top comb.

Saco-Lowell Shops, 60 Batterymarch St., Boston, Mass.

Do you want more data? Write ◂ or use card on page 163; list A-123

Continuous Winding Yarn Tester Saves Time



With the Cook constant tension continuous winding tester, continuous running lengths of yarn can be tested. A 15-minute run on this machine will reveal yarn behavior to an extent which would require many hours of testing on a single end yarn strength tester.

Having once established the weight with which a yarn under test is to be loaded in order to produce and not exceed a predetermined number of breaks per 1000 yd, repetition of this test will reveal at all times whether the yarn in question is up to standard.

Experience in the use of the machine will indicate whether the breaks which occur during testing are "regular breaks" or "weak spots."

Stellite American Corp., 60 East 42nd St., New York 17, N. Y.

Do you want more data? Write ◂ or use card on page 163; list A-124

Cold Water Soluble Print Thickener

A chemically modified locust bean gum, Carobene, is truly a completely soluble cold water print thickener. It requires no special equipment for make-ready nor any special method of usage. Mixing or agitation is the same as for any other print thickener.

Some of its characteristics are: Viscosity always stable

and uniform; good emulsifying power; high thickening and fixation power; quick washability; printing and color values improved; easy, even dye penetration; will not streak or cloud fabric; does not stick on rollers or molds.

Bushman Products, Inc., 369 Lexington Ave., New York 17, N. Y.

Do you want more data? Write ◂ or use card on page 163; list A-125

Acrilan-Wool Blends Dyed by One-Bath Process

Satisfactory union dyeings of Acrilan-wool blends by a one-bath method have been obtained with a new dyeing assistant called Decomine. This new product is a balanced composition of cationic and nonionic ingredients which, when properly employed, produces dyeings of remarkable uniformity and excellent color value.

Decomine is an amber color liquid which dissolves readily at all temperatures to a clear solution at working concentrations and maintains this clarity at the boil under the conditions employed in dyeing. The product itself is in the neutral pH range and is highly resistant to sulfuric acid at the concentrations recommended for the dyeing process. It has excellent storage properties under all normal atmospheric conditions.

For practically all applications, 1% to 4% of Decomine, calculated on the weight of the fabric, is recommended, the lower amount for pastel or light shades with proportionately increasing amounts for darker shades.

Many types of wool dyes, including the metallized colors, may be used successfully but all dyes of the several classes will not work equally well. Accordingly, for optimum results, the dyes must be selected carefully from the standpoint of obtaining satisfactory transfer properties to achieve a good union in a minimum dyeing time.

Arkansas Co., Inc., P. O. Box 210, Newark 1, N. J.

Do you want more data? Write ◂ or use card on page 163; list A-126

Equipment Briefs

Now available as replacements for the older grease lubricated type are **oil-lubricated antifriction cross shaft bearings for spinning frames.** Instead of a projecting fitting for insertion of grease into the bearing, the improved unit has a hard rubber seal which lies almost flush with the cap and so cannot be broken off. The rubber seal construction allows oil to be used as a lubricant for the needle bearings inside. Oil is injected with a hypodermic type needle. Lubrication cycle is the same as for grease type.

Saco-Lowell Shops, 60 Batterymarch St., Boston, Mass.

Do you want more data? Write supplier or use card on page 163; list A-201

Closed-circuit TV installations in the textile industry can be remote controlled to provide operator safety in hazardous locations, assure undetected operation in security and surveillance work, and permit quick and accurate viewing of widely spaced objectives with a **closed-circuit television system** called the "285-A Servo System." It includes a multi-lens TV camera which is entirely directed by a separate monitor-console. Simply by turning an appropriate knob on the console can any function of the camera be achieved—i.e., lenses on the camera may be changed, focusing set, and camera directed up or down, right or left, all by remote control.

Dage Television Div., Thompson Products, Inc., Michigan City, Ind.

Do you want more data? Write supplier or use card on page 163; list A-202

A reduction of 25 per cent in the manual efforts required for hydraulic hand lift truck pallet handling operations is the result when the new, light weight, low cost Yale & Towne Model A **hand truck of 2000-pound capacity** is used. It lifts a pallet a total of four inches from the ground with nine easy foot pedal strokes. Can be built to handle standard pallets of 30 to 72 inches in six inch increments. Standard over-all fork widths are 24, 27, and 30 inches.

Yale Materials Handling Div., Yale & Towne Mfg. Co., 11,000 Roosevelt Blvd., Philadelphia 15, Pa.

Do you want more data? Write supplier or use card on page 163; list A-203

A new **mobile laboratory glassware washer** reduces labor costs and eliminates glassware breakage. Cleans beakers, test tubes, Petri dishes, round and flat bottom flasks, etc., with greater speed and safety than hand work. Operator cannot get injured. Called "Power-Scrub," the unit is a self-contained cabinet with stainless steel sink bowl and rubber-tired casters. Can be placed at any spot in lab. Four power-driven vertical spiral brushes in the sink bowl are always submerged during cleaning. Also available are a portable model for use in laboratory sinks and a built-in model for permanent installation in existing sinks.

Labline, Inc., 3070-82 W. Grand Ave., Chicago 22, Ill.

Do you want more data? Write supplier or use card on page 163; list A-204

"Spray Valve Panels" are designed to **spray-lubricate bull gears, girth gears, and other spur or herringbone gear trains.** Self-contained, they are fastened to gear housings or framework and spray the lubricant directly to the pressure side of the gear teeth. Central pumping units deliver gear lubricant at regular intervals through a circuit of measuring valves which distribute lubricant under pressure to spray valves where it is mixed with air to form a penetrating spray.

The Farval Corp., 3249 East 80th St., Cleveland 4, Ohio.

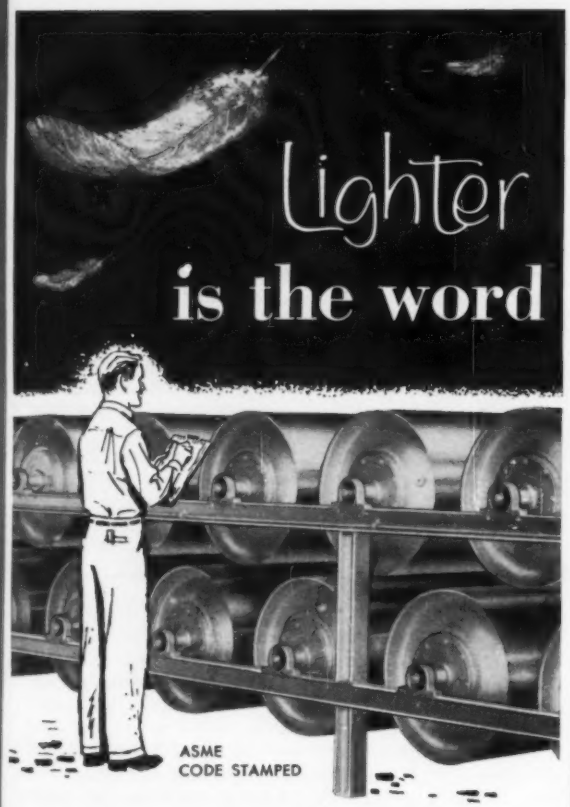
Do you want more data? Write supplier or use card on page 163; list A-205

An hydraulically operated, 10,000-lb capacity **adjustable ramp for loading docks** is known as the Adjust-A-Dock Model 6 MF. It can be installed recessed in a dock, partially recessed, or in front of the dock depending on the specific requirements of its application. Has manual floating feature which provides smooth, level ramp that automatically compensates for spring deflection of truck bed during freight transfer. Pushbutton controls operate dock and its floating action.

Rowe Methods, Inc., 2534 Detroit Ave., Cleveland 13, Ohio.

Do you want more data? Write supplier or use card on page 163; list A-206

Extremely high cleaning efficiency, moderate cost, and nearly complete freedom from maintenance expense are advantages of Wheelabrator Ultra-filtration, a **process for super cleaning atmospheric air** with industrial-type air filtration equipment. Employs conventional industrial dust collectors of the tubular cloth filter type. Process



There's no point in pulling extra weight in old flat heads, now that the new Sims Stainless Steel 75 psi reverse dished head Dry Cans* are available They aren't featherweights, true . . . but they're *lighter . . . easier on the bearings . . . require much less horsepower and space.* Bearings, drive chains and belts give longer, smoother performance with less costly down time, since the lighter the load, the longer they last. These new Sims Dry Cans give uniform transmission of heat and efficiently eliminate steam condensate. Furnished Teflon-coated if desired.

For ECONOMY and QUALITY

Our modern and progressive metal-working shops, skilled craftsmen and know-how — these are your guarantees of quality. For custom tailoring of stainless steel, call, wire or write *now.*

Fabricators Since 1928

Sims METAL WORKS

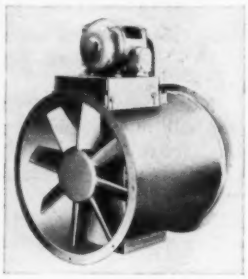
WEST POINT, GEORGIA

*PATENT PENDING

involves charging of filter bags with a filter aid which precoats the filtering surfaces and provides a highly efficient matrix upon which the fine particles of atmospheric dust and tarry matter are collected. Only maintenance required is shaking of spent filter aid (which lasts from two to three years) and accumulated dust from filter bags.

Wheelabrator Corp., S. Byrkit St., Mishawaka, Ind.

Do you want more data? Write supplier or use card on page 163; list A-207



Important efficiency gains and noise level reductions have been achieved in the new Chicago **Axial Airfoil Fans,** Type L. They feature: (1) a new type wheel with an enlarged hub which approximates the diameter of the motor to reduce air turbulence and (2) tapered blades with a new airfoil section to give smoother air stream flow with a higher percentage of air delivery over the full length of the blade. Eight heavy-duty models meet a wide variety of applications.

Chicago Blower Corp., 9869 Pacific Ave., Franklin Park, Ill.

Do you want more data? Write supplier or use card on page 163; list A-208

The new Allen Model B-2-A **two-ton half-press** can be easily adapted for any punching, shearing, forming, riveting, blanking, cutting, drawing, etc., operation, large or small within rated capacity. Ideal for materials such as leather, textiles, plastics, paper, metal, etc. As a half-press unit, it can be mounted on existing column and base, leaving desired working space which makes it possible to perform operations which would ordinarily require a much larger press due to working space involved. On continuous operation, this press will mass produce up to 300 operations per minute.

Alva Allen Industries, Punch Press Dept., 1001-1015 N. Third St., Clinton, Mo.

Do you want more data? Write supplier or use card on page 163; list A-209

Two new **lauryl alcohols,** designated Dytol J-68 and 95% Lauryl Alcohol, are available for textile applications such as finishing and softening agents or as emulsifiers and detergents.

Rohm & Haas Co., Washington Square, Philadelphia 5, Pa.

Do you want more data? Write supplier or use card on page 163; list A-210

The new Magne-trol **control board for visual control of operations** provides visual records that are more impressive and dramatic, is so flexible that it can be applied to any problem, and provides the easiest and quickest method of changing the visual record. Consisting of a magnetic steel board which holds firmly on its surface the visual elements that comprise the needs of the user, it can be utilized for production schedules, sales records and quotas, management control and analysis, graphs and charts, service schedules, inventory control, personnel records, traffic control, warehouse records, organization charts, etc.

Methods Research Corp., 441 Mosel Ave., Staten Island 4, N. Y.

Do you want more data? Write supplier or use card on page 163; list A-211

The new "Exactol" **tube bender** is a compact, crank-

operated, worm-gear device for easy manual bending to exact tolerances. It will readily handle annealed or ⅛H cold drawn stainless steel tubing. Produces bends up to 180° in one continuous smooth operation without strain or fatigue. Slide block furnished has grooves for six tube sizes: ¼, 5/16, ⅜, ½, and ¾ inch outside diameters.

Tube and Hose Fittings Div., The Parker Appliance Co., 17325 Euclid Ave., Cleveland 12, Ohio.

Do you want more data? Write supplier or use card on page 163; list A-212

A new feature is available on the **Time Recorder-Totalizer** which provides a continuous operation record of any electrically operated machine or process (see TI for December, 1955, page 114). When desired, a counting device can be furnished in place of the time totalizer for determining the number of operations or pieces produced or processed by machines such as punch presses, drill presses, stamping machines, etc.

Heat-Timer Corp., 657 Broadway, New York 12, N. Y.

Do you want more data? Write supplier or use card on page 163; list A-213

An **automatic oiling device for transfer type circular knitting machines** lubricates the cylinder and dial needles, the main dial shaft bearing, and the dial cap bearing; reduces needle butt breakage and excessive cam wear. It is included as standard equipment on all of these machines manufactured by

Jacquard Knitting Machine Co., Inc., Philadelphia 24, Pa.

Do you want more data? Write supplier or use card on page 163; list A-214

A 95 per cent pure **zinc coating which is applicable with a brush or spray gun to standing structural parts** renews galvanizing on parts that have lost the original protective coating or provides a zinc protection to standing towers, fences, or air conditioning ducts which, being in position, could not otherwise be coated.

Wilbur & Williams Co., Boston 35, Mass.

Do you want more data? Write supplier or use card on page 163; list A-215

Save time and manpower and eliminate injuries when moving heavy machinery, etc., by using **Mighty Mover Dollies,** each of which has two 4" roller bearing cast iron wheels and heavy steel side plates and a top swivel plate that has a standard ½" threaded hole to which machinery is quickly bolted. In sets of four, they replace pipe, skids, winches, and cables usually required to move heavy equipment. Machinery to be moved with Mighty Movers is raised with a mover's jack or fork lift, the dollies bolted to the feet, and equipment easily pushed or moved with a pry bar. They make 90° turns and a set will carry 90 tons.

Mighty Mover Co., 1482 S. Milwaukee St., Denver 10, Colo.

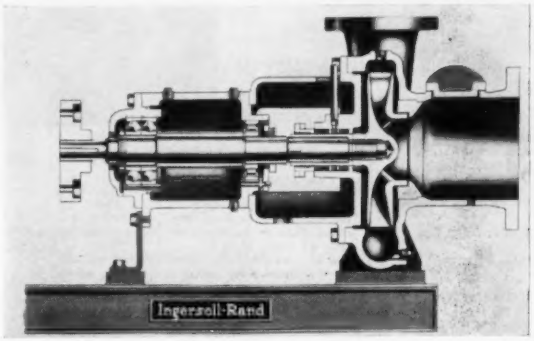
Do you want more data? Write supplier or use card on page 163; list A-216

New **lighter weight stainless steel spoons for all drawing frames** are more sensitive in their balancing qualities than the old type. Mills will also find them easier to manipulate if and when they need rebalancing.

Saco-Lowell Shops, 60 Batterymarch St., Boston, Mass.

Do you want more data? Write supplier or use card on page 163; list A-217

A **centrifugal pump for liquids containing solids, air or gases** offers these advantages: non-vapor-binding, self-venting, non-clogging, and self-regulating. A horizontal, single-stage unit built in sizes from 4 to 12 inches with



capacities from 200 to 7000 gpm and heads from 5 to 225 feet, it features a diverging type impeller which has a much greater area at the discharge than at the inlet.

Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y.

Do you want more data? Write supplier or use card on page 163; list A-218

A new line of **industrial fans,** designated Series 106, with a new streamlined design for high efficiency is now available. It provides complete coverage of the full range of industrial requirements and features a new packaged industrial fan complete with motor, V-belt drive, and running gear enclosure.

American Blower Corp., Detroit 32, Mich.

Do you want more data? Write supplier or use card on page 163; list A-219

A **reversible roof ventilator** which moves air in either direction with almost equal efficiency can be supplied in all sizes for flat roof, slope roof, or peak installation. Flick of switch converts fan from exhaust to intake unit.

Hartzell Propeller Fan Co., Piqua, Ohio.

Do you want more data? Write supplier or use card on page 163; list A-220

Ucon **vacuum pump lubricants** are essentially unaffected by the carbon disulfide in exhaust air from textile processes that causes ordinary lubricants to gum and clog. They have unusual resistance to forming sludge, varnish, or coke at high temperatures. Pumps run with little smoking.

Carbide and Carbon Chemicals Co., 30 East 42nd St., New York 17, N. Y.

Do you want more data? Write supplier or use card on page 163; list A-221

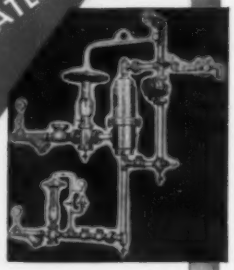
Case-hardened and chrome-plated piston rods, Teflon rod wipers, Teflon hydraulic rod seals, and high quality black ferric oxide surfaces that resist rust are new features of Miller **air and hydraulic cylinders** so that longer cylinder life, improved performance, and wider usage are the results.

Miller Fluid Power Co., 2040 N. Hawthorne Ave., Melrose Park, Ill.

Do you want more data? Write supplier or use card on page 163; list A-222

For thickening textile print pastes Burtonite V-7-E was recently announced. Thickens water phase of any mixture while providing colloidal stabilization at low cost. 3 ounces of this powdered solid in a gallon of water make

Insist on Pick INSTANTANEOUS HOT WATER HEATERS



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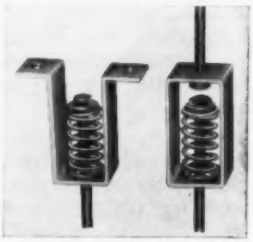
657 BROADWAY, NEW YORK 12, N.Y.

the water so viscous it is barely pourable. Viscosity is not adversely affected by organic acids.

The Burtonite Co., Nutley 10, N. J.

Do you want more data? Write supplier or use card on page 163; list A-223



A new line of **high-deflection, heavy-duty vibration hangars,** designed to prevent transmission of noise and vibration from suspended equipment and to flexibly support piping systems has been developed. Known as Finnflex Types S and SC steel spring vibration hangars, these units consist of a helical steel spring enclosed in a steel housing. Springs do not corrode, withstand high temperatures without creep or permanent set and low temperatures without increase in stiffness. Rated load capacities range from 50 to 1000 pounds.

T. R. Finn & Co., Inc., Industrial Div., Hawthorne, N. J.

Do you want more data? Write supplier or use card on page 163; list A-224

Three new colors have been added to the color range of Courtaulds' **solution-dyed rayon staple,** Coloray—terra cotta, medium brown, and hunter green. Available in 1½ denier, 1 9/16" staple; also 3 denier, 2" staple.

Courtaulds (Alabama) Inc., 600 Fifth Ave., New York, N. Y.

Do you want more data? Write supplier or use card on page 163; list A-225

Invisible and noiseless operation, greater safety for people and equipment, extra dependability in any weather, minimum space requirements, and virtually maintenance-free performance without need of adjustment or lubrication are advantages offered by a new line of **submersible type booster pumps.** Features include: oversize shaft, longer bearings with protective caps, perihedral impeller seals, mechanical shaft seal designed specifically for submerged service, and a choice of either mixed-flow or radial-flow impellers. Factory assembled, they are ready for use without venting, filling, adjustment, or alignment. Standard models available from 5 to 150 hp with discharge head 50 to 500 feet and 100 to 4,000 gpm capacity. Suited to typical sump, line booster, cooling tower, fire protection, and barrel pumping installations.

Layne & Bowler Pump Co., 2943 Vail Ave., Los Angeles 22, Calif.

Do you want more data? Write supplier or use card on page 163; list A-226

An **emergency lighting unit,** using a new hermetically sealed nickel-cadmium, lifetime battery, gives many years of service with no maintenance whatever. Lighting unit includes automatic charging facilities which keep battery fully charged at all times. Turns on automatically when power fails and rapidly restores full battery energy once power is resumed. No addition of liquid to battery at any time is required.

Dynaseal Lighting Corp., 5 Hadley St., Cambridge 40, Mass.

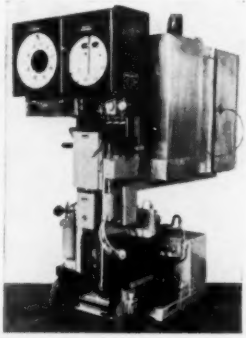
Do you want more data? Write supplier or use card on page 163; list A-227

Smaller, lighter, and cooler are three advantages of the new Series 100 Howell **electric motors** which are available

in totally enclosed fan-cooled, open drip-proof, and explosion-proof types. They feature an exclusive internal ventilating system that provides 50 per cent more contact between cooling air and active lamination materials. As a result, temperature ratings are easily maintained with ample overload capacities.

Howell Electric Motors Co., Howell, Mich.

Do you want more data? Write supplier or use card on page 163; list A-228



Stationary and portable models of a **hot and cold cabinet,** complete in every way with controls, are available for use in the laboratory in conjunction with tensile strength testing. It is a packaged unit, requiring only water inlet and outlet and connections for electrically or air operated controls. Stationary model (Type I) can be either vertical or horizontal. Portable model (Type II) is mounted on lift truck for easy movement to testing machines. Temperature range: minus 100 to plus 600 F.

Atmosphere Control Co., Inc., 5315 Chester Ave., Philadelphia 43, Pa.

Do you want more data? Write supplier or use card on page 163; list A-229

New or existing Scott **Incline-Plane Serigraphs can now be equipped with an instant-return drive** which permits instant return to starting position from any point of the test cycle by simply touching a lever on the gear box. This feature gives the machine much faster operation in production testing for ultimate tensile, as well as making it more flexible in any type of test.

Scott Testers, Inc., 60 Blackstone St., Providence, R. I.

Do you want more data? Write supplier or use card on page 163; list A-230

A new line of **shorter, round-frame, flange-mounted motors** in the 1 to 15 hp range offers these advantages: Less space utilized, lighter in weight, better performance. Can be furnished in either open type frame or totally enclosed fan cooled type. For vertical or horizontal installation.

Century Electric Co., St. Louis 3, Mo.

Do you want more data? Write supplier or use card on page 163; list A-231

For use with types K, L, and M copper tubing in dyeing, bleaching, and finishing plants, etc., is a complete new line of five **bronze soldered-end valves.** Secure connections are easily made by a simple soldering operation, and the installation assures smooth, full flow and compact assembly. Line includes three gate valves — rising stem with double-wedge disk, rising stem with solid-wedge disk, and non-rising stem with single-wedge disk. All three are rated at 125 psi steam pressure and 200 psi water, oil, or gas. A bronze swing check valve with renewable disk and side plugs carries same pressure ratings. Also there is a non-metallic-disk globe valve rated at 150 psi steam and 300 psi water, oil, and gas.

Lunkenheimer Co., P. O. Box 360, Cincinnati, Ohio.

Do you want more data? Write supplier or use card on page 163; list A-232

For applications requiring flow indication with positive check of back-flow is a **sight flow indicator** designated as Fig. 213 Bull's Eye Check Valve Indicator. The device has a self-aligning soft seat flapper which prevents back flow. Two ½" windows on opposite sides of the body fitting—removable for easy cleaning—show clearly whether or not there is a flow.

Fischer & Porter Co., Hatboro, Pa.

Do you want more data? Write supplier or use card on page 163; list A-233

New Books

The year 1954 ended the first 10-year period since Textile Research Journal was established as successor to Textile Research, previously published by Textile Research Institute. An index to all the research papers that have appeared during this period has been prepared and is ready for distribution. This index, titled *Ten Years of T. R. J. Decennial Index, 1945-1954,* is a 60-page publication containing both author and subject sections. Price $5.00 per copy. Order from the Publications Department of the Institute, P. O. Box 625, Princeton, N. J.

History of Hosiery, by Milton N. Grass, traces historical origins of clothing, from primitive foot coverings and leggings to modern stretch-to-fit socks and stockings. Contains facts about the origins of the hosiery industry in America, growth of hosiery industry in U. S., etc. Published by Business Book Division, Fairchild Publications, Inc., 7 East 12th St., New York 3, N. Y. Price of limited first edition, $10.00 plus postage.

Cotton Fibers, by Clarence J. Pope of Lowell Technological Institute, was written and published primarily for students at LTI taking the textile fibers course. Includes chapters on how cotton is grown, how it is ginned, cotton classing and testing, marketing, etc. Available from Lowell Technological Associates. Price, $3.75.

The first American edition of *A Handbook of Textile Finishing,* by A. J. Hall, is available from The Chemical Publishing Co., Inc., 26 Court St., Brooklyn 2, N. Y. (price $6.75). Provides an outline of many finishing processes. Included are chapters on the modification of appearance, the alteration of handle, the promotion of dimensional stability, and the improvement of serviceability.

Principles of Industrial Waste Treatment, by C. Fred Gurnham, was published recently by John Wiley & Sons, Inc., 440 Fourth Ave., New York 16, N. Y. (price $9.50). It deals with the sources, pollutional effects, and methods for the treatment and disposal of liquid wastes produced by industry.

Crown Publishers, Inc., 419 Fourth Ave., New York 16, N. Y., recently published *The Art and Craft of Hand Weaving* (Including Fabric Design), by Lili Blumenau (price $2.95). Four parts: Evolution, Fibers, Weaves, and Design. Accent is on imaginative self-development. Book includes a buyer's guide, a bibliography of other up-to-date reading material, and an index.

A 374-page bibliography on infra-red radiation and its multitude of applications in science, technology, and industry has been made available to the public by the Office of Technical Service, U. S. Dept. of Commerce, Washington 25, D. C. (price, $3.00). Designated *Infrared: A Library of Congress Bibliography,* PB-111643.

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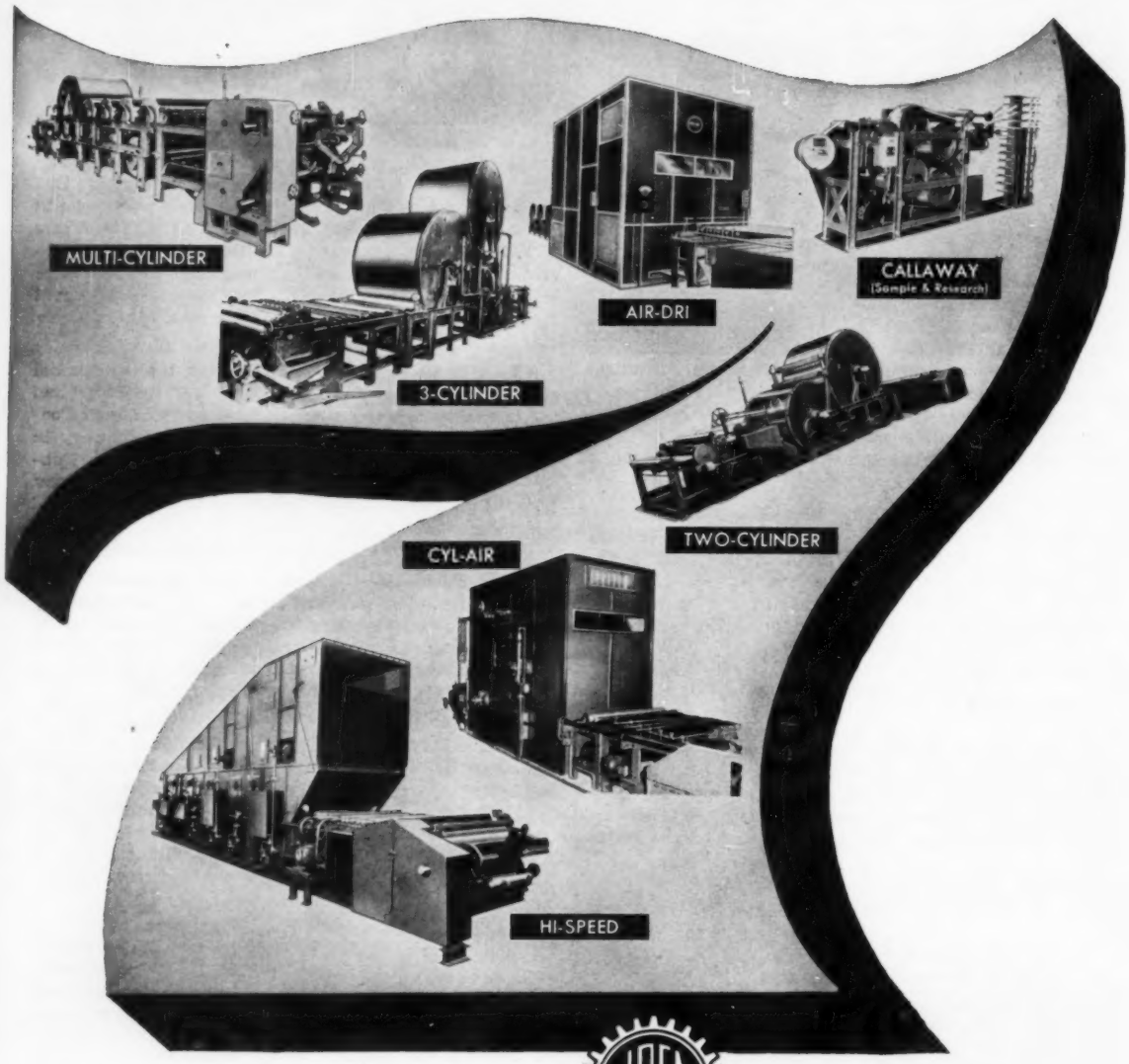

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1-2 Roller Bearings for Textiles. Easy to read non-technical bulletin describes where and how Hyatt Roller Bearings are employed for more profitable textile production. Write Hyatt Bearings Div., General Motors Corp., Harrison, N. J.

1-3 High Speed Automatic Quiller. Color booklet describes the Schlafhorst "Autocopser," listing its advantages and giving dimensions. Write Terrell Machine Co., Inc., P. O. Box 928, Charlotte, N. C.

1-4 Overhead Materials Handling. Three booklets available from Louden Machinery Co. treat economical material handling, twin fan ceiling cleaners, and shock proof electrification. Write Louden Machinery Co., Fairfield, Iowa.

1-5 Textile Research at American Viscose. Color booklet tells the story of the Textile Research Department which is, in effect, a many-sided textile mill. Write American Viscose Corp., 350 Fifth Avenue, New York 1, N. Y.

1-6 Dyeing, Bleaching and Drying Equipment. Excellent color brochure by Morton describes their complete line of dyeing, bleaching and drying equipment for cotton, wool and synthetics. Write Morton Machine Works, 1718 3rd Ave., Columbus, Ga.

1-7 Nappers for Treating Any Fabrics. Bulletin gives complete details on the Muller Tri-Napping Machine with 24, 30, or 36 rollers. Dimensions and weights included. Write Franz Muller, M. Gladbach, Germany.

1-8 Ribbon Calenders. Brochure features Dickerhoff Ribbon Calenders for the purpose of calendering, embossing, etc., of narrow fabrics. Write Engineering Works, Herm. Dickerhoff Ltd., Wuppertal Barmen, Western Germany.

1-9 Micro Switch Bulletins. Complete selection of bulletins featuring Micro Switch products is now available. Includes prices, characteristics, applications, etc. Write Micro Switch Div., Minneapolis-Honeywell Regulator Co., Freeport, Ill.

1-10 Hermas Textile Machines. Selection includes brochures on Unwind Stand, Automatic Guiding Unit, Jet Mixer, Selvage Trimming, Clothroom Machinery. Write Hermas Machine Co., Hawthorne, N. J.

1-11 Rayon—Mile By Mile. Color booklet describes how Industrial Rayon Corporation produces rayon mile by mile which is perfect inch by inch. Write Industrial Rayon Corp., 500 Fifth Ave., New York 18, N. Y.

1-12 James Hunter Machines for Dyeing and Finishing. Comprehensive Catalog contains complete file of bulletins on all Hunter machines having application in dyeing and finishing. Excellent reference data for dyehouses. Write James Hunter Machine Co., North Adams, Mass.

1-13 Custom Made Thread Guides. Color brochure describes complete line of American Lava Company's thread guides. Composition, properties, specifications of all designs included. Write American Lava Corporation, Chattanooga 5, Tenn.

1-14 Precision Gear Bulletins. Now available from Precision Gear are bulletins on machinery products for cleaning and picking, roving frames, spinning and twisting and a general catalog on gears. Write Precision Gear and Machine Co., 2001 N. Tryon St., Charlotte 2, N. C.

1-15 Moisture Controller and Indicators. Literature available from Strandberg Engineering covers indicators for slashers, tenters, etc.; for direct connection to pickers, and automatic controllers for connection to same. Write Strandberg Engineering Laboratories, 416 W. Market St., Greensboro, N. C.

1-16 Stainless Dry Cans. Bulletin describes advantages of Unistel Stainless Dry Cans including details of construction. Profusely illustrated. Write Unistel Textile Machine Corp., 225 Westchester Avenue, Port Chester, N. Y.

1-17 Wet Processing Machinery. Complete file of bulletins on Riggs and Lombard Wet Processing Machinery available. Write for catalog index sheet giving summary. Riggs and Lombard, Inc., Suffolk Street, Lowell, Mass.

1-18 Industrial Greases. Now available from Sinclair is a bulletin detailing qualities and specifications of multi-purpose lithium soap industrial greases. Write A. S. Randak, Sinclair Refining Co., 600 Fifth Ave., New York, N. Y.

1-19 Roller Bearing Spindle. Color booklet gives principal features and main advantages of SMM Roller Bearing Spindle. Detailed drawings included. Write H. Phil Worth, Box 1555, Greenville, S. C.

1-20 Aligning Lays. Informative booklet gives setting instructions for aligning lays. Complete treatment, including step-by-step drawings. Write Draper Corporation, Hopedale, Massachusetts.

1-21 Static Elimination. Bulletin by Simco describes effective, simple, safe and inexpensive means of eliminating static. Write Simco Company, 920 Walnut St., Lansdale, Pa.

1-22 Industrial Track Equipment. Color booklet describes SAFE-RAIL track developed as a supplement to the ZIG-ZAG power conveyor. Complete engineering data included. Write Richards-Wilcox Mfg. Co., Aurora, Ill.

1-23 Automatic Boilers. Bulletin describes POWER-MASTER Automatic Boilers for light and heavy oil; gas or combination Gas-Oil Firing. Complete table of data. Write Orr and Sembower, Inc., Reading, Pa.

1-24 Spindle Oil. Color brochure describes "Gulfspin," showing how it insures against excessive wear in cast iron bolsters and provides freedom from spindle wobble. Write Gulf Oil Corporation, Gulf Bldg., Pittsburgh, Pa.

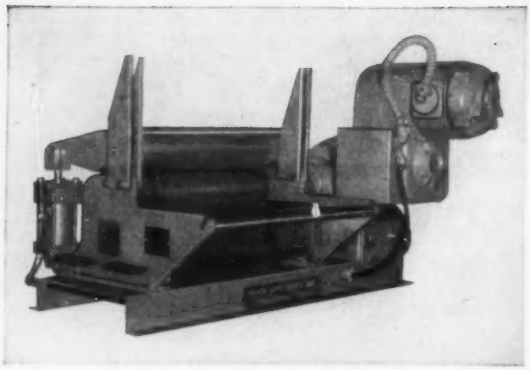
1-25 Stresses On Overhead Tracks. Booklet describes in detail stresses developed in various type tracks used for overhead materials handling systems. Track peening also covered. Write Cleveland Tramrail Div., Wickliffe, Ohio.

1-26 Sonoco Tubes for Package Dyeing. Color bulletin describes Sonoco's DYTEX tubes for one-time use in standard package dyeing equipment to achieve uniformity. Write Sonoco Products Co., Hartsville, S. C.

1-27 Toledo Truck Scales. Booklet tells how mills may save on installation and throughout long, useful life of Toledo Truck Scales. Gives capacities and advantages. Write Toledo Scale Company, Toledo 1, Ohio.

1-28 Selvage or Back Marking Machine. Complete specifications and performance data on a new fully automatic marking machine available from Kaumagraph. Write Kaumagraph Co., Wilmington 99, Delaware.

1-29 Chemicals, Dyes and Intermediates. Complete file of bulletins available on Metro-Atlantic products. Covers wide range. Write for product resume showing bulletins offered to Metro-Atlantic, Inc., Centredale 11, R. I.



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15. NEW INDUSTRIAL FIBER—Technical bulletin now available on Fortisan-36, new industrial fiber by Celanese. Uses text, charts and diagrams to present technical properties, characteristics and recommendations for processing.—TEXTILE SALES DEPARTMENT, CELANESE CORPORATION, Charlotte, N. C.

17. A FAIR DAY'S PAY AND IN RETURN A FAIR DAY'S WORK—8-page booklet outlining the services offered to industry for the proper utilization of labor, material and equipment, and the resulting advantages for both labor and management.—AMERICAN ASSOCIATED CONSULTANTS, INC., 250 Park Ave., New York, N. Y.

22. THE WONALANCET WAY—Is the title of a editorial booklet published five times a year and dealing with current problems which appear worthwhile at the time they are written.—WONALANCET COMPANY, 128 Burke St., Nashua, N. H.

23. TEXTILE STEELS—Six booklets are available from Atlantic Steel Company which will prove valuable to persons concerned with the purchase or use of steel.—ATLANTIC STEEL CO., P. O. Box 1714 Atlanta 1, Ga.

THE CHEMSTRAND NYLON STORY—Booklet describes one of the greatest industrial ventures of the textile industry in the South—the birth and growth of Chemstrand Nylon.—CHEMSTRAND CORP., 350 Fifth Ave., New York 1, N. Y.

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102. "TANK TALK"—Sixteen-page booklet of illustrations showing various types of elevated steel tanks constructed and erected by manufacturers as well as stand pipes, reservoirs, storage and high pressure vessels, cylinders, along with helpful technical data. Also a list of what a few of the cotton mills, etc., said.—R. D. COLE MANUFACTURING COMPANY, Newnan, Ga.

103. HUMIDIFICATION, EVAPORATIVE COOLING—Bulletins available displaying AMCO automatic self-cleaning atomizers, controls, and evaporative cooling equipment.—AMERICAN MOISTENING CO., 260 W. Exchange St., Providence, R. I.

105. CASTERS AND WHEELS — Catalog gives complete description on full line of industrial casters and wheels. Features patented "LOCKWELD Steel Casters Without A Kingpin" both Single and Double Ball Race.—THE FAIRBANKS CO., 393 Lafayette St., New York 3, N. Y.

106. FINNELL COMBINATION SCRUBBER-VAC—Illustrated literature gives complete specifications and describes various methods of combination-machine-scrubbing, including method recommended for cleaning oily floors.—FINNELL SYSTEMS, INC., 1300 East St., Elkhart, Indiana.

111. CERTIFIED CLIMATE AIRCHANGER SYSTEM—Bulletin describes Certified Climate Airchanger System as used with direct humidification for partial or complete air conditioning.—PARKS-CRAMER CO., Fitchburg, Mass.

112. HARDWOOD FLOORING — Booklet entitled "Specialist in Manufacturing of Hard Maple Flooring for textile plants."—CONNOR LUMBER & LAND COMPANY, P. O. Box 810, Wausau, Wisconsin.

113. COTTON MILL EQUIPMENT — This book traces pictorially the steps in processing raw cotton into finished cloth. It shows the equipment needed for all phases of production, as well as containing a "Useful Information" section on Power Factor Correction, Lighting, Circuit Protection, etc.—WESTINGHOUSE ELECTRIC CORP., 511 Wood St., Pittsburgh 30, Pa.

114. PENETRATING WOOD FINISH — Bulletin gives applications, uses and application specifications of floor seals for textiles.—E. I. DU PONT DE NEMOURS & CO., INC., Finishes Division, Wilmington, Delaware.

115. FOAMGLAS—Illustrated brochure features information on how the use of Foamglas cellular glass insulation solved the severe insulating problems of leading users.—PITTSBURGH CORNING CORP., One Gateway Center, Pittsburgh 22, Pa.

116. STOP CORROSION—Details on speed Rex paint for metal wood and concrete maintenance solving condensation problems.—TRUSCON LABORATORIES, Box 69, Milwaukee Junction, P. O. Dept. T, Detroit 11, Mich.

117. CLEANING SYSTEMS — Booklet entitled "Certified Climate and Cleaning Systems" gives latest information on system. Products and uses fully discussed with two story layout of Certified Climate central station air conditioning system.—PARKS-CRAMER CO., Fitchburg, Mass., and Charlotte, N. C.

119. LIQUIDATION INFORMATION—Information available on how to profitably dispose of mill properties being liquidated. Tells how Comer will buy, sell and relocate industry in your former site.—COMER MACHINERY CO., 684 W. Peachtree St., Atlanta, Ga.

120. STAINLESS STEEL FOR TEXTILES — 40-page booklet gives applications and advantages of stainless in textile plant equipment of all types.—ALLEGHENY LUDLUM STEEL CORP., Dept. TI-71, Oliver Bldg., Pittsburgh 22, Pa.

121. CRANES AND HOISTS—Portfolio of bulletins describes the complete line of Shepard Niles traveling hoists and floor or cab operated traveling cranes.—SHEPARD NILES CRANE & HOIST CORP., Montour Falls, N. Y.

122. TEXTILE MILL CLEANING GUIDE—Useful book by Oakite prescribes methods and means of proper mill cleaning and maintenance.—OAKITE PRODUCTS, 26C Rector St., New York 6, N. Y.

127. SOLENOID VALVES — Bulletin "V" lists sizes from one-half inch to 3 inches; valves for normally open or closed service; stainless steel or Jenkins disc seats; three-way solenoid valves, etc.; typical installations.—THE JOHNSON CORP., Three Rivers, Mich.

130. STAINLESS STEEL FABRICATION—Illustrated color booklet by Sims describes the advantages of stainless steel with regard to textile operations. Also includes information on ventilating and drying slasher exhaust, and materials handling systems.—SIMS METAL WORKS, West Point, Ga.

131. "AIR PROCESSING"—Set of three bulletins showing real meaning of the term, where it can be used, the requirements for a successful system, etc.—J. O. ROSS ENGINEERING CORP., 444 Madison Ave., New York 22, N. Y.

135. COLOR CONDITIONING—Booklet illustrated in color describes how Du Pont color conditioning puts color to work for you. Many ideas on safety brought out which color can aid.—E. I. DU PONT DE NEMOURS & CO., INC., Finishes Div., Wilmington 98, Delaware.

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146. FUNCTIONAL GLASS BLOCK DATA—Folder shows in detail daylighting function of Light-directing and Light-diffusing Functional Glass Blocks.—PITTSBURGH CORNING CORP., 307 4th Ave., Pittsburgh 22, Pa.

150. RIHCO HUMIDIFIERS AND COOLING SYSTEMS—Bulletin describes new atomizers with construction lessening air consumption in humidifier systems, evaporative cooling systems.—ALDRICH MACHINE WORKS, Greenwood, S. C.

151. INDUSTRIAL BRUSHES—Illustrated booklet of industrial brushes featuring textile usage on shears, printing machines—also flock, raising and cylinder brushes.—M. W. JENKINS SONS, INC., 444 Pompton Ave., Cedar Grove, N. J.

153. LAMINATED TEXTILE PLASTICS—Booklet by Synthane Corporation shows variety, application, and advantages of laminated plastic parts and supplies for the textile industry.—SYNTHANE CORPORATION, Textile Division, Oaks, Pa.

161. AUTOMATIC CLEANING EQUIPMENT—Complete booklet by American MonoRail shows working details and advantages of the Tri-Rail Cleaner, a great improvement over the original unit.—AMERICAN MONORAIL CO., 13107 Athens Ave., Cleveland 7, Ohio.

162. MODERN METHODS OF TEXTILE FLOOR MAINTENANCE—Illustrated treatise on the history of floor cleaning in textile plants and a detailed description of new methods for reducing floor cleaning costs as well as preserving textile mill floors.—G. H. TENNANT COMPANY, 2530 N. Second St., Minneapolis 11, Minn.

173. BLOWERS AND EXHAUSTERS — Bulletin No. 3014-D describes types "E" and "RE" electric blowers and exhausters. Uses and full description of each with detail drawings.—BUFFALO FORGE CO., 490 Broadway, Buffalo 5, N. Y.

174. PAINT STRIPPING BOOKLET — Illustrated booklet providing helpful data on latest materials and methods for simplified stripping of paint. Methods described include: (1) steam gun; (2) hot flow-on; (3) cold spray; and (4) tank immersion.—OAKITE PRODUCTS, INC., 22 Thames St., New York 6, N. Y.

181. AIR FILTRATION — Bulletin 234 describes and illustrates the Auto-Airmat, which is the automatic dry-type air filter. Principle of operation, performance characteristics, construction and installation fully discussed.—AMERICAN AIR FILTER COMPANY, INC., 275 Central Ave., Louisville 8, Ky.

POWER TRANSMISSION, MOTORS, BELTING, LUBRICATION . . .

201. V-BELT DRIVE CATALOG — This handy, pocket-sized catalog helps you make quick and easy selections of any Dayton V-Belt Drive from 1 to 1000 HP. Contains many concise, accurate drive tables, diagrams, and other important engineering data.—DAYTON RUBBER CO., Dayton, Ohio.

203. TREADED LEATHER BELTING—This 16-page booklet describes Houghton's line of patented specially treaded leather belting for all types of power transmission. Booklet includes valuable engineering and maintenance section.—E. F. HOUGHTON & CO., Philadelphia, Pa.

208. CUTLER-HAMMER MOTOR CONTROL — Booklets describe the combination starters for the textile industry, for roving frames and spinning frames, loom switch and Cutler-Hammer Motor Control for textile cards.—CUTLER-HAMMER, 315 N. 12th St., Milwaukee, Wisconsin.

209. STEEL PULLEYS—Pictorial review of American Steel Pulleys, their manufacturing processes and some of their end uses. Textile pulleys are featured.—AMERICAN PULLEY CO., 4200 Wissahickon Ave., Philadelphia 29, Pa.

212. GATES TEXTILE ACCESSORIES — Handy pocket-size catalog BHM-7, fully illustrated, gives specifications of Gates textile accessories including pickers, lug straps, check straps, cone belts, evener belts, harness straps, take-up roll covering, and others.—THE GATES RUBBER COMPANY, 1001 Broadway, Denver 17, Colo.

213. LUBRICATION OF ELECTRIC MOTORS—Illustrated bulletin on lubricating and cleaning ball and roller bearings on electric motors.—NEW YORK & NEW JERSEY LUBRICANT COMPANY, 292 Madison Ave., New York 17, N. Y.

217. DYNAMIC RESPONSE D-C MOTORS—Illustrated bulletin describes the new Reliance Super "T" Line D-c. Motors with Dynamic Response. Information is included on speed ranges, acceleration rates, enclosures, dimensions and selection data. — RELIANCE ELECTRIC & ENGINEERING CO., 1088 Ivanhoe Road, Cleveland 10, Ohio.

218. BALL BEARINGS FOR TEXTILE MACHINERY—A 40-page catalog illustrating Fafnir Ball Bearing units for replacement or new applications in all phases of textile processing.—THE FAFNIR BEARING CO., New Britain, Conn.

222. AUTOMATIC PRODUCTION CONTROL — Booklet by Reeves Pulley Company shows application of many automatic processes and controls to the textile industry. Well illustrated, it contains engineering data quite useful to anyone interested.—REEVES PULLEY COMPANY, Columbus, Indiana.

223. LUBRICATION OF BEARINGS—Booklet entitled "Lubrication and Maintenance of Ball and Roller Bearings" gives helpful list of do's and don'ts to prolong bearing life. Also includes valuable information on storage and handling of lubricants.—NEW YORK & NEW JERSEY LUBRICANT CO., 292 Madison Ave., New York 17, N. Y.

225. HYDRAULIC SLASHER DRIVES — Color booklet by Vickers shows how hydraulic drives provide an economical approach to improved slasher operation. Has detailed pictures and enumerates advantages.—VICKERS, INC., 1036 Peachtree St., Atlanta, Ga.

228. NEW NEEDLE OIL—Booklet by Shell gives facts on Xexilla Oil 117, which gives 12 times more rust protection during operation and during shutdown periods.—SHELL OIL CO., 50 West 50th St., New York 20, N. Y.

229. DODGE GENERAL POWER TRANSMISSION MACHINERY—Catalog describes various types of power transmission apparatus by Dodge. Gives specifications, sizes, applications, and prices. Very comprehensive.—DODGE MANUFACTURING CORP., Mishawaka, Indiana.

232. "VARI-PITCH" SHEAVE BULLETIN — Stationary and motion control of "Vari-Pitch" sheaves for speed variation up to 76 per cent by means of pitch diameter adjustment, capacities 1 to 600 HP are described in new bulletin.—ALLIS-CHALMERS MFG. CO., Milwaukee 1, Wisconsin.

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237. MOTOR CONTROL—Brochure gives description and engineering data on the Cutler-Hammer Motor Control for roving and spinning frames. Users listed and advantages discussed.—CUTLER-HAMMER, INC., Milwaukee, Wisc.

238. TEXTILE LEATHERS CATALOG — Catalog by J. E. Rhoads & Sons gives characteristics and advantages of Rhoads "Tannate" leathers. Complete line is listed and described, and tips for correct installation. Copiously illustrated.—J. E. RHOADS & SONS, 2100 W. Eleventh St., Wilmington 99, Del.

240. CATALOG OF NEEDLE BEARINGS — New catalog conveniently presents design, application and use data for five types of needle bearings. Actually an engineering short course on bearings with visual index units.—THE TORRINGTON CO., Torrington, Conn.

253. TEXTILE LUBRICATION — "Lubrication" a magazine published by the Texas Co. is available. Shows methods and means of lubricating chain drives in very comprehensive form.—THE TEXAS CO., 135 East 42nd St., New York 17, N. Y.

256. METERED LUBRICATION—Bulletin 6A has 12 illustrated pages showing how central lubricating systems are applied to combers, roving frames, winders, knitters, looms, etc.—BIJUR LUBRICATING CORP., Rochelle Park, N. J.

265. SERVICE PROCEDURE FOR BALL BEARINGS—A helpful manual for maintenance engineers giving helpful hints on disassembly, inspection, cleaning, lubrication, and replacement of ball bearings in any mechanism.—NEW DEPARTURE, Division of General Motors Corp., Bristol, Conn.

INSTRUMENTS, STEAM SPECIALTIES . . .

301. JOHNSON ROTARY PRESSURE JOINTS—Bulletin describing the rotary pressure joint which requires no packing, no lubrication and no adjustment, giving installation and maintenance instruction, types, sizes, dimensions and prices.—THE JOHNSON CORP., Three Rivers, Mich.

302. TEXTILE INSTRUMENTATION—New booklet gives details on Brush Lapcheck, Brush Tension Analyzer, Brush Imperfection Counter, and Improved Uniformity Analyzer. Pictures uses and capacities of each machine discussed.—BRUSH ELECTRONICS CO., 3405 Perkins Avenue, Cleveland 14, Ohio.

304. WASTE HEAT RECOVERY—Color booklet describes Bready System of waste heat recovery from polluted or soiled waste water. Includes pictures and complete facts.—LUDELL MFG. CO., 5200 West State Street, Milwaukee, Wisconsin.

313. "THE FAIRBANKS VALVE COMP/ CHART"—New reference manual important in specification, ordering, and using of bronze and iron-bod valves.—THE FAIRBANKS COMPANY, 393 Lafayette Street, New York 3, N. Y.

321. RED-RAY BURNERS — Bulletin describing use of Red-Ray Burners in preheating and partial drying to increase capacity of frame.—RED-RAY MFG. CO., 445 W 45th St., New York, N. Y.

324. STROBOTAC—Informative reprint, "Strobotac Boosts Efficiency in Woolen and Synthetic Mills."—GENERAL RADIO CO., Cambridge 39, Mass.

337. COUNTING DEVICES—Catalog of Trumeter's complete line of counters for every application where counting, measuring or registering is required. Colored pictures illustrate each application.—TRUMETER COMPANY, 1265 Broadway, New York, N. Y.

339. NEW LUBRICATED PLUG VALVES—Illustrated booklet by The William Powell Co. features a new line of semi-steel and steel lubricated plug valves. Advantages include quick and positive shut off.—THE WILLIAM POWELL COMPANY, 2525 Spring Grove Ave., Cincinnati 22, Ohio.

CARDING, SPINNING, WINDING . . .

401. LUMMUS DUSTLESS STEEL BLENDING FEEDERS—Bulletin describing automatically closing, positively locking door on feeders to prevent overloading, choking.—ALDRICH MACHINE WORKS, Greenwood, S. C.

402. AUTOMATIC CLEANING AND OVERHEAD HANDLING FOR TEXTILE MILLS—24-page bulletin describing the American Monorail Automatic Cleaner for preventing accumulation of lint on spinning, twisting, winding and warping machines. Also for cleaning monitors and card room ceilings.—THE AMERICAN MONORAIL CO., Cleveland, Ohio.

403. TRAVELING CLEANERS — 4-page bulletin describes the improved Parks-Cramer Frame and Room Cleaners including the Underframe and Floor Sweepers.—PARKS-CRAMER CO., Fitchburg, Mass.

404. LAPLESS ENDLESS SPINNER — Bulletin and full information will be supplied on lapless endless spinner and coning belting.—TON-TEX CORPORATION, 31 Columbus Ave., Englewood, N. J.

408. CARD GRINDING INFORMATION—Outlines care of grinders, instructions on speed to run grinders, amount of oil to add to machine and other pertinent information.—B. S. ROY & SON CO., Worcester, Mass., and Charlotte, N. C.

411. SHEET METAL WORK—Pamphlet describes spinning cylinders, aspirators, card screens, sheet metal specialties.—GASTONIA TEXTILE SHEET METAL WORKS, INC., 222 East Long Avenue, Gastonia, N. C

412. SERVICE FOLDER—Folder covers textile metal products including spinning and twisting cylinders, card screens, etc.—JENKINS METAL SHOPS, INC., Gastonia, N. C.

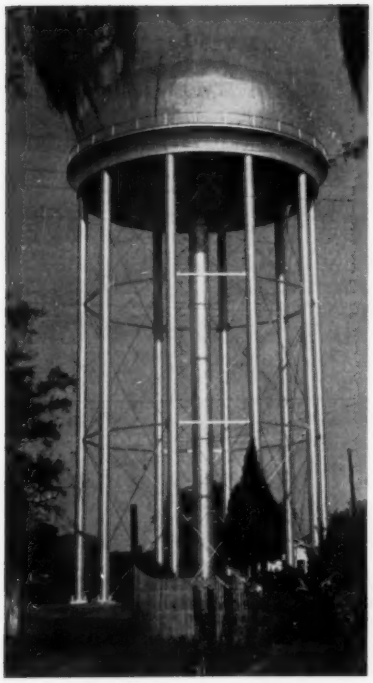
413. HIGH SPEED, AUTOMATIC QUILLER—Color booklet by Schlafhorst describes the "Autoconer" Automatic Quiller. Gives advantages, space requirements, etc.—TERRELL MACHINE CO., INC., Charlotte, N. C.

414. WORSTED SPINNING—Bulletin explaining and illustrating Saco-Lowell's new system for worsted spinning, from top to yarn in five economical and efficient stages.—SACO-LOWELL SHOPS, 60 Batterymarch St., Boston 10, Mass.

415. DOUBLER-TWISTER FOR LARGE PACKAGES—Bulletin describing two new machines producing straight or tapered top bobbins. Suitable for filament or spun yarns up to three pound capacity. Individual thread stop motion fully discussed.—FLETCHER WORKS, INC., Philadelphia, Pa.

416. THE BRIEF SAGA OF THE RING TRAVELER—An interesting history relative to the ring traveler, which is in reality the basis of the spinning frame. John Thorpe's invention of ring traveler, the development of the spindle, and the invention of Rabeth's Bolster type spindle are covered.—NATIONAL RING TRAVELER CO., Pawtucket, R. I.

417. FEATHERTOUCH DRAFTING—Booklet describes in detail with pictures the most uniform drawing, the strongest drawing with the highest production per frame at the lowest cost.—IDEAL INDUSTRIES, INC., Bessemer City, N. C.



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422. WARPER BEAMS—Folder describes the high speed for rayon tire cord, cotton warper beams, cast aluminum end supports and large diameter heads.—U. S. BOBBIN & SHUTTLE CO., Lawrence, Mass.

423. SPINDLE OILING MACHINE — Information available on new Spindle Oiling Machine. Features include filter system to clean oil for reuse; smaller size for narrow aisles.—WICACO MACHINE CORP., 4800 Stenton Ave., Wayne Junction, Philadelphia 44, Pa.

424. GREASE-SEALED, ANTI-FRICTION ROLLS—Booklet contains description and engineering drawings of the Cole grease-sealed, anti-friction rolls. Also contains information on dual apron controlled drafting units.—COLE ENGINEERING CORP., P. O. Box 153, Columbus, Ga.

425. HANDY, REFERENCE TABLES — Folder showing spinning traveler speeds, sizes of ring flanges, etc.—VICTOR RING TRAVELER CO., Providence, R. I., and Gastonia, N. C.

426. UNIRAIL UPTWISTER — Bulletin describes Universal Winding's headless package or bobbin take-up Unirail Uptwister which gives you higher yarn quality and better packages at faster speeds and lower costs, according to the bulletin. Well illustrated with advantages discussed.—UNIVERSAL WINDING COMPANY, P. O. Box 1605, Providence, R. I.

429. BETTER FLYER AND SPINDLE EFFICIENCY—Entertaining booklet by Ideal Machine Shops gives facts about Flyers and Spindles which have helped many mills gain more efficient production, better yarn quality.—IDEAL MACHINE SHOPS, INC., Bessemer City, N. C.

431. TEXTILE VACUUM SYSTEM—Color bulletin by Spin Sa Vac describes application of their vacuum system to drawing, roving and spinning processes, and for the removal of broken ends, fly or sliver. Complete diagrams and shots of typical installations.—SPIN SA VAC CORPORATION, 1438 South Tryon St., Charlotte, N. C.

432. PRECISION TEXTILE WINDING—Bulletin on Kidde Tensions and Density Control for winding rubber cones.—WALTER KIDDE & CO., INC., Belleville, N. J.

433. PERMANENT PLATE MAGNETS—Bulletin shows how Eriez Magnetic Separators prevent fires and protect machinery from tramp iron in all types of textile mills.—ERIEZ MFG. CO., Erie, Pa.

434. SPINNING AND TWISTER RINGS—Catalog and price list now available on Whitinsville "Diamond Finish" spinning and twister rings. Complete details and pictures.—WHITINSVILLE SPINNING RING CO., Whitinsville, Mass.

435. DOUBLE DECK TWISTERS—Bulletin describes Jumbo (8 oz. to 1½ oz. headless or take-up spool packages) and Acme (up to 10 oz. packages) models for high speed twisting of silk, rayon, nylon, etc., to finest deniers.—U. S. TEXTILE MACHINE CO., Scranton 8, Pa.

436. MAINTENANCE INFORMATION FOR YOUR SCOTT TESTER—Booklet containing maintenance data for calibration of Scott Testers, clamps for testers, gear-box lubrication, and recording.—SCOTT TESTERS, INC., Providence, R. I.

438. HEADLESS PACKAGE TWISTER ELIMINATES REDRAWING—Literature shows high-speed Face Drive Twister for accurately building tapered or straight-end headless packages which go direct to quilling or warping without redrawing.—U. S. TEXTILE MACHINE CO., Scranton 8, Pa.

439. PNEUMAFIL SUCTION CLEANING SYSTEMS—Booklet describes types of Pneumafil Systems, gives details of new Collector Unit model C-4. New type LFC Pneumafil is also discussed. Diagrams, comparison charts and installation pictures included. —PNEUMAFIL CORP., Charlotte 8, N. C.

444. OPENING AND CLEANING MACHINERY—Color brochure by Dodenhoff describes their waste machine, enclosed feeder, conveyors and cleaner. Specifications included with pictures.—W. D. DODENHOFF CO., Box 178, Greenville, S. C.

445. ROLLER BEARING SPINDLES — Illustrated booklet showing various types of Marquette Roller Bearing Spindles. The unique full-floating footstep bearing is pictured in cut-away views, and its advantages are described.—THE MARQUETTE MET PRODUCTS CO., 1145 Galewood Ave., Cleveland, Ohio.

447. CONE WINDER—Form A95 describes the Foster Model 102 winder which produces the Foster knitting cone for spun yarns, warping cones and tubes for dyeing and twister supply.—FOSTER MACHINE COMPANY, Westfield, Mass.

448. AUTOMATIC BLENDING SYSTEM—Dodenhoff system, called "Fiber Meter" is fully described in color booklet. Gives actual operating results, shows pictures and illustrates typical conversion of old fashioned systems.—W. D. DODENHOFF CO., 745 Loundes Hill Road, Greenville, S. C.

449. NEW CONDENSER TAPE — Literature by Benjamin Booth describes newly introduced SUPR-O-TAPE, an impregnated fabric condenser tape. Shows actual sample of tape and gives complete prices.—BENJAMIN BOOTH CO., Allegheny Ave. & Janney St., Philadelphia 34, Pa.

452. PNEUMAFIL LINT-FREE CREEL — Color booklet describes the new Airfoil Design Pneumafil type LFC with Built-in Lint-Free Creel. Gives complete details and pictures.—PNEUMAFIL CORPORATION, Charlotte 8, North Carolina.

453. EVENNESS TESTER—Folder explaining how this Tester takes the guess out of quality control and each processing step from carding through spinning.—USTER CORPORATION, Charlotte, N. C.

458. CONICAL RINGS AND FLYERS — Special data available on the Herr conical rings and flyers.—HERR MANUFACTURING CO., INC., 318 Franklin St., Buffalo 2, N. Y.

459. TENSION CONTROLS — Folder describing tension compensation and automatic tension controls. Three models—Standard, Warp, and Double Disc fully described with specific application.—WALTER KIDDE & CO., INC., Belleville 9, N. Y.

461. PRECISE WIND MACHINE—Foru A-92 describes the Foster Model 75 widely used for winding straight or pineapple cones and tubes of rayon, nylon and other filament yarns.—FOSTER MACHINE COMPANY, Westfield, Mass.

462. TEXTILE MACHINERY PARTS CATALOG—A 24-page illustrated catalog describing the complete line of Dayco and Thorobred textile machin including Cots, Aprons, Loop Pickers, Lag Straps, etc.—DAYTON RUBBER CO., Dayton, Ohio.

467. CARD CLOTHING—8-page booklet by Benjamin Booth Company describes Strip-O-Matic Card Clothing and its advantages.—BENJAMIN BOOTH COMPANY, Allegheny Avenue & Janney Street, Philadelphia, Pa.

469. SHORT CUT TO STAPLE FIBER SPINNING—Color brochure shows the ten steps in operation of the Turbo Tow Stapler, gives technical details and diagrams.—TURBO MACHINE COMPANY, Lansdale, Pa.

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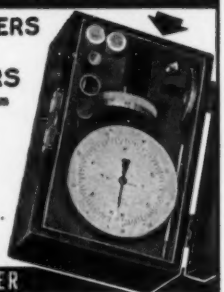

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472. TWISTING MACHINERY — Bulletin gives outstanding features, specifications facts and useful information on Novelty Yarn Twisters for Cotton, Worsted and Rayon Yarns.—COLLINS BROTHERS MACHINE COMPANY, 647 Roosevelt Ave., Pawtucket, Rhode Island.

474. BALL BEARING COMB BOXES—Southern States Equipment Corp. offers literature on their famous C-1 Ball Bearing Comb Boxes. Description, working principle, cut-away views shown.—SOUTHERN STATES EQUIPMENT CORP., Hampton, Ga.

475. TEXTILE ROLL COVERINGS AND MILL SUPPLIES—Color booklet by Armstrong shows and describes their complete line of textile roll coverings, including also loom supplies, mill supplies, roll covering for cotton, silk and synthetic and woolen and worsted systems. An excellent guide book.—ARMSTRONG CORK CO., Industrial Div., Lancaster, Pa.

476. TEXTILE FIBER OPENER FOR COTTON, SYNTHETICS, WOOL—New brochure by Cen-Tennial Cotton Gin Co. gives complete data on the Cen-Tennial Opener which incorporates improvements on the original SRRL Opener. Complete operating procedure is described.—CEN-TENNIAL COTTON GIN CO., Columbus, Ga.

478. TIPS ON CARDING PROCEDURE—Monthly bulletin by Ashworth Brothers includes many useful tips and advice on carding operation, maintenance and care and is available to anyone interested. Bulletin is a reprint of section appearing on green paper in the issue.—ASHWORTH BROTHERS, Fall River, Mass.

485. WEAVER'S KNOTTER—A catalog on the Boyce Weaver's Knotter giving a few instructions as to its use, recommendation as to the proper type knotter for the various types of yarns, and the spare parts that go to make up the knotter.—A. H. CARTER, INC., Gastonia, N. C.

486. COTTON SIZING WASTE PROBLEM SOLUTION—Booklet describes the use of soluble, low-pollutional CMC in place of starch and how this can reduce costs.—HERCULES POWDER CO., Wilmington 99, Delaware.

WEAVING, SLASHING . . .

501. LOOMS—An accordion type folder is available entitled "Unfolding to You the World's Largest Line of Looms." Information on all types fully discussed.—CROMPTON & KNOWLES LOOM WORKS, Worcester 1, Mass.

502. COUNTING AND MEASURING DEVICES—Condensed textile catalog illustrating and describing pick counters, hank counters, cut meters, measure counters, Wide range of counting devices for production recording on all types of textile machinery.—VEEDER-ROOT, INC., Hartford, Conn.

504. LOOM SUPPLIES — Literature describing complete line of straps, strapping, pickers, picker cords, sticks, binders, bumpers, brake lining and allied products.—E. H. JACOBS NORTHERN DIV., THE BULLARD CLARK CO., Danielson, Conn.

505. INNOVATION IN TEXTILE DRYING—Booklet by J. O. Ross gives details on Steam or Gas "Hot Air" Slasher for high speeds at low cost.—J. O. ROSS ENGINEERING CORP., 444 Madison Ave., New York 22, N. Y.

506. SLASHING HINTS—A 20-page booklet offering helpful hints on warp sizing. Subjects: Size cooking equipment, section beam tension, sizing selvages, cooking, use of split rods, weighing for the mix t on cooking equipment, storage in kettles, etc.—SEYDEL-WOOLLEY & Co., 748 Rice St., N.W., Atlanta, Ga.

508. LOOM PRODUCTION CHARTS—Convenient celluloid card showing yards per loom per week of 40 hours at various loom speeds.—RALPH E. LOPE.. CO., Greenville, S. C.

510. CONTROLLED SIZING—Brochure in color describes the legend, operation and specification of the new Griffin Size Machine. Features most important basic improvements in size machines in many years —IRA L. GRIFFIN & SONS, P. O. Box 1576, Charlotte, N. C.

511. ALUMINUM BEAMS—Catalog No. 1-21 describes Hayes magnesium and aluminum specialties for the textile industry. Illustrates this combeams that are one-third the weight of conventional types.—HAYES INDUSTRIES, INC., Jackson, Mich

514. THE STORY OF STARCHES—Semi-technical booklet tells the story of starches and information on how they are produced, the creation of new specialty starches, the unique "man-made" starch derivatives, and the handling of starches.—NATIONAL STARCH PRODUCTS, INC., 270 Madison Avenue, New York 16, New York.

515. WARPING, SLASHING, WEAVING ARNEL YARNS—8-page booklet preliminary information on Arnel Triacetate Yarns.—CELANESE CORP. OF AMERICA, TEXTILE DIVISION, Box 1414, Charlotte, N. C.

517. LOADING SYSTEM—Bulletin 417, on pneumatic loading system for Saco-Lowell slasher size box squeeze rolls, contains installation photo, features, specifications, and prices.—THE FOXBORO COMPANY, Foxboro, Mass.

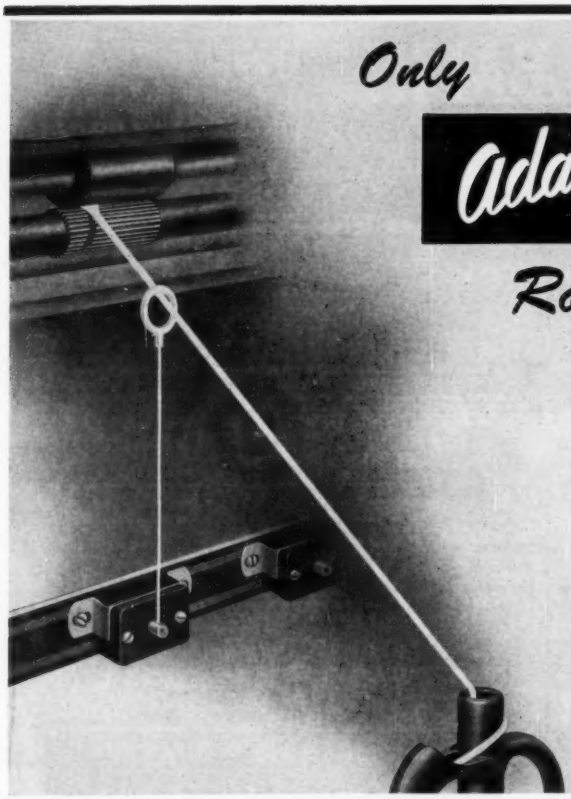
521. STEEL WARP BEAMS—20-page Catalog No. 45 illustrating Standard and Special Purpose Warp Beams for the weaving industry, both broadloom and narrow fabrics, Also Textile Machinery Specialties.—MILTON MACHINE WORKS, INC., Milton, Pa.

530. ROTARY UNIONS—New catalog shows how to cut costs, get better sealing on can dryers, slashers, calenders, etc. Catalog No. 500 entitled "Where Good Connections Count."—PERFECTING SERVICE COMPANY, Atando Ave., Charlotte, N. C.

537. WEST POINT'S HOT AIR SLASHER—Bulletin describes advantages and capacities of new hot air slasher by West Point Foundry and Machine Works. Detailed specification included.—WEST POINT FOUNDRY AND MACHINE WORKS, West Point, Georgia.

538. AIR SLASHER DRYER — Pamphlet by Proctor & Schwartz shows construction and operating details of the Proctor Air Slasher Dryer. Advantages listed and cut-away view shown.—PROCTOR & SCHWARTZ, INC., 7th St. and Tabor Rd., Philadelphia 20, Pa.

541. BOOKLETS ON COCKER CUSTOM BUILT EQUIPMENT — Six new bulletins available from Cocker include information on the high speed Warp Sizer, high speed Beam Warper, Cocker Creels and Tensions, Beam Back-Winders, Indigo Dye Ranges, Kettles, T-Boxes, etc.—COCKER MACHINE & FOUNDRY CO., Gastonia, N. C.



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545. NOPCO CHEMICAL DATA SHEETS—Now available are Nopcostats, Nopco Sizes N and D. Important points in Warp Sizing. Interpretation o Analysis, Wetting Agents, Balanced Wool and Worsted Oils, Acetate Warp Sizing, Viscose Warp Sizing, Rayon Soaking.—NOPCO CHEMICAL CO., Harrison, N. J.

601. CONTINUOUS PEROXIDE BLEACHING RANGES—Booklet gives illustrations and describes uses and gives specification of Ranges.—RODNEY HUNT MACHINE CO., 49 Mill St., Orange, Mass.

603. EMCO ROTARY CUTTER WINDER—Bulletin gives applications, sizes and exclusive features. —H. W. BUTTERWORTH & SONS CO., Bethayres, Pa.

606. HYDRAULIC POWER UNITS—Literature describing hydraulic unit, motor, pump, reservoir, valving a small compact unit for operating of hydraulic calenders, presses, hydraulic controls, etc.—B. F. PERKINS & SON, INC., Holyoke, Mass.

608. WASHERS FOR SCOURING, BLEACHING ACIDIFYING—Well-illustrated booklet shows how Sargent's modern, high-capacity, continuous process washers can help maintain quality and decrease costs. Contains operation diagram and good commentary on construction.—C. G. SARGENT'S SONS CORPORATION, Graniteville, Mass.

610. PROCTOR DRYING MACHINERY FOR THE TEXTILE INDUSTRY—Illustrated, descriptive catalog on all types of dryers for raw stock, warps, package dyed and automatic skein yarn. Also includes pre-boarding and automatic boarding machines for hosiery.—PROCTOR & SCHWARTZ, INC., 7th and Tabor Rd., Philadelphia, Pa.

611. LOW COST DYEING—Bulletin by Blickman describes their fully enclosed, stainless steel Dyebox. Reports increased production per man hour and more runs per day at lower cost.—BLICKMAN, INC., Gregory Ave., Weehawken, N. J.

614. TEXTILE FINISHING MACHINERY — Further information concerning the Wiesner-Rapp textile finishing machinery as connected with the Textile and Chemical Industries. Helpful in discussing processing problems.—THE WIESNER-RAPP CO., INC., 1603 Seneca St., Buffalo 10, N. Y.

615. HIGH PRODUCTION EXTRACTOR FOR RAW STOCK—YARN—HOSIERY—Descriptive bulletin and full information on automatic Twintainer Extractor with bottom-unloading removable baskets. Machine replaces three conventional extractors, lowers labor costs.—FLETCHER WORKS, INC., Philadelphia, Pa.

617. AUTOMATIC CONTROL SYSTEM FOR CONTINUOUS BLEACHING—Illustrated folder describes the new method of controlling the temperatur , pressure, and liquid level in the continuous bleach operation.—TAYLOR INSTRUMENT COMPANIES, Rochester 1, N. Y.

618. APPLICATION OF FUGITIVE DYES—Bulletin describes UNITINT operation, giving advantages of effectively controlling the application of fugitive dyes to various fibers.—W. D. DODENHOFF COMPANY, 745 Lowndes Hill Rd., Greenville, S. C.

619. PENFORD FINISHING GUMS—Booklet by Penick & Ford gives complete data, including physical properties and results which may be expected on Penford gums.—PENICK & FORD, LTD., 420 Lexington Ave., New York 17, N. Y.

620. REGENERATION OF ZEOLITE WATER SOFTENERS—Booklet explains advantages of International's Lixate Process in regeneration of zeolite water softeners. Shows how it cuts costs and does a better job.—INTERNATIONAL SALT COMPANY, INC., Scranton, Pa.

621. "DYEING SYNTHETIC FIBERS"—Brochure giving a comprehensive, detailed analysis of the methods and materials available for dyeing synthetic fibers.—GENERAL DYESTUFF CO., 435 Hudson St., New York 14, N. Y.

627. SINGLE APRON STOCK DRYERS — Folder presenting the latest idea in automatic drying which every mill having drying problems can profitably use to meet modern manufacturing conditions.—C. G. SARGENT'S SONS CORP., Graniteville, Mass.

628. TREATMENT OF SYNTHETIC TEXTILE FINISHES—High speed drying and curing of synthetic finishes by means of far-infrared radiation is covered in a new 22-page folder entitled "The Textile Report" by EDWIN L. WIEGAND COMPANY, 7700 Thomas Blvd., Pittsburgh 8, Pa.

630. COMPLETE NAPTHOL MANUAL—Practical working handbook, 110 pages, on textile dyeing and printing applications of Napthols. Write on company letterhead.—PFISTER CHEMICAL WORKS, Box 326, Ridgefield, N. J.

631. ELIMINATE DYE-BATH SHOCK — Data sheet by Foxboro shows how woven fabrics and hosiery may be protected from Crow's-feet, uneven shade, creasing caused by too rapid cooling of goods.—FOXBORO COMPANY, 487 Neponset Ave., Foxboro, Mass.

632. LUG STRAP WASHERS—Series 1-C illustrated bulletin detailing right and wrong application and use of washers.—E. H. JACOBS NORTHERN DIV., Danielson, Conn.

637. BALL BEARING TURNTABLE—Leaflet describing this 48" diameter steel turn table for use in mills where the cloth is delivered in rope form to trucks and the trucks are placed in position ahead of a Scutcher or cloth opening machine. Advantages discussed.—BIRCH BROTHERS, INC., 32 Kent St., Somerville, Mass.

639. ROTARY DYEING MACHINE—Booklet No. 425 illustrating the features of these stainless steel machines used for dyeing hosiery, hats, gloves, socks, etc.—SMITH, DRUM & CO., Allegheny Ave. at 5th St., Philadelphia 33, Pa.

643. SURFACE-ACTIVE AGENT—Bulletin gives characteristic properties, suggested applications, etc., of the Nonionic Octylphenoxyethanol Triton Surface-Active Agents.—ROHM & HAAS CO., Special Products Dept., Philadelphia 5, Pa.

653. GUIDERS AND TENSION DEVICES—Illustrated and described are the Mount Hope Precision Guiders and open width Tension Devices used for accurate, straight line guiding of open width goods. Bulletin SG-PG.—MOUNT HOPE MACHINERY CO., 65 Fifth St., Taunton, Mass.

658. BEAM MULTIPLE DYEING—Information on the Morton System Horizontal Beam Dyeing machine is available. Features include minimum handling of beams and the use of a common or individual dyebath for as many as six beams—MORTON MACHINE WORKS, 1718 Third Avenue, Columbus, Ga.

DYESTUFFS, CHEMICALS, SOAPS . . .

701. MAGNESIUM APPLICATIONS—Case history information on magnesium application in the textile field, published bi-monthly with latest developments in the magnesium industry.—DOW CHEMICAL CO., Midland, Mich.

704. FUNDAMENTALS OF INDUSTRIAL WATER TREATMENT PROCESSES—24-page booklet entitled "If You Use Water" discusses the fundamentals of the three major classifications of industrial water

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treatment based on ion exchange: softening, dealkalization, and deionization.—ROHM & HAAS COMPANY, Resinous Products Div., Washington Square, Philadelphia 5, Pa.

705. THEORETICAL AND APPLIED SILK-SOAKING—Attractive 23-page booklet outlining methods of silk-soaking and outlining investigation on the soaking, back-winding and degumming of silk.—HART PRODUCTS CORP., 1440 Broadway, New York 18, N. Y.

707. BRINE FOR TEXTILE INDUSTRY—32-page booklet on the Lixate Process replaces former booklet on making brine that has been a standard reference for years. Contains much more technical information. —INTERNATIONAL SALT CO., INC., Cranton, Pa.

710. DEPUMA—An odorless, viscous, non-evaporating emulsion which is highly efficient as an anti-foam, useful in all phases of dyeing and printing.—AMERICAN ANILINE PRODUCTS, INC., 50 Union Square, New York, N. Y.

712. CATALYST AC-6 — Booklet describes how Catalyst AC-6 steps up curing efficiency as much as 25 per cent. Free eight-ounce bottle upon request.—MONSANTO CHEMICAL COMPANY, Plastic Division, Dept. TI-3, Springfield 2, Mass.

714. NEW SODA ASH BULLETIN—64-page edition contains both new material and revisions of previously used data covering the subject.—SOLVAY SALES DIVISION, 40 Rector St., New York 6, N. Y.

715. AQUAROL AND ARKANSAS PRODUCTS—Bulletin on Aquarol water repellent finish with method of preparing bath; also on other Arkansas products for cotton, wool, silk and yarn, hosiery processing.—ARKANSAS CO., INC., Newark, N. J.

719. WOOL OIL—Descriptive booklet on anti-static fiber lubricant, Twitchell 7421. Performance factors given particular emphasis are static control, scourability, lubricity and resistance to yellowing.—EMERY INDUSTRIES, INC., Dept. 5, Carew Tower, Cincinnati 2, Ohio.

720. INDUSTRIAL OIL—Bulletin catalogs all of Swift's Industrial Oil and Fatty Acid products. Included are detailed specifications, shipping information and suggested usage on products of animal, vegetable and marine sources.—SWIFT & COMPANY, Industrial Oil Department, 1800 165th Street, Hammond, Indiana.

722. RESINS & LATICES — Booklet describes chemigum, latex, pliolite latex, plivoia latex, plivoic AO and their applications. Gives properties of Goodyear Latices.—GOODYEAR CHEMICAL DIV., 1144 East Market St., Akron 16, Ohio.

723. CHEMICAL CATALOG—Features detergents, wetting agents, emulsifiers, brighteners, sequestrants, dyeing assistants with chemical composition, properties and application.—ANTARA CHEMICALS DIV. GENERAL ANILINE & FILM CORP., 435 Hudson St., New York 14, N. Y.

724. WICA CHEMICAL BULLETINS — Bulletins describe in technical terms the various Wica Products for textiles. Issued each month for the benefit of industry, they are an excellent help in wet processing. To get on the mailing list write—WICA CHEMICALS, INC., P. O. Box 596, Charlotte, N. C.

727. COLOR PRINCIPLES — Booklet available from Sandoz Chemical describes the fundamental principles of color and its measurement. Booklet has been adopted by several of the leading textile schools. —SANDOZ CHEMICAL WORKS, INC., 61 Van Dam Street, New York 13, N. Y.

729. STATIC AND STATIC CONTROL — Papers deal with historical background of static electricity and the problems caused by it along with methods of controlling them.—DEXTER CHEMICAL CORP., 819 Edgewater Road, New York 59, N. Y.

733. WOOL OILS—Twin booklets by Proctor and Gamble tell of the influence of wool oils in producing quality yarns and fabrics, and of Proctor and Gamble's Proxol T, an outstanding wool oil.—PROCTOR AND GAMBLE DIST. CO., Cincinnati, Ohio.

734. BLEACHING WITH PEROXYGEN CHEMICALS—Bleaching methods for cotton, rayon, nylon and animal fibers are comprehensively treated in Becco Research and Development Dept., Bulletin No. 52, now available.—BUFFALO ELECTRO-CHEMICAL CO., INC., Station B, Buffalo 7, New York.

745. RAPIDASE FOR DESIZING—Bulletin explaining in detail the properties and characteristics of Rapidase.—WALLERSTEIN CO., INC., 180 Madison Avenue, New York 16, N. Y.

746. INDUSTRIAL CHEMICALS—24-page booklet listing alphabetically Harshaw industrial chemicals and applications.—THE HARSHAW CHEMICAL COMPANY, 1945 East 97th Street, Cleveland, Ohio.

747. CATIONIC SURFACE ACTIVE AGENT—Technical bulletin describes Harshaw's UVERSOFT "D" which produces full, soft hand while acting as an outstanding anti-static agent. — HARSHAW CHEMICAL CO., 1945 East 97th St., Cleveland 6, Ohio.

753. TRITON X-100—Booklet available describing this highly concentrated detergent and wetting agent. Main uses fully discussed and chemical properties brought out.—ROHM & HAAS COMPANY, Philadelphia 5, Pa.

757. THE CHEMISTRY OF CYNANURIC CHLORIDE—Very comprehensive technical text by American Cyanamid Co. Gives physical properties, reaction chart, chemical properties, potential applications, toxicity, table of alcohol reactions, table of amine and related compound reactions.—AMERICAN CYANAMID CO., 20 Rockefeller Plaza, New York 20, New York.

766. DU PONT PEROXIDE BLEACHING SYSTEMS—New book illustrating and describing this continuous peroxide bleach system. Layouts and other information included.—E. I. DU PONT DE NEMOURS & CO., ELECTROCHEMICAL DEPT., Wilmington, Del.

769. SURFACE TENSION DEPRESSANT — The booklet, "Mercerizing and Alkamerce—The Ideal Dry" which can be used as a wetting agent; a dye leveling agent, a penetrant in package dyeing.—HART PRODUCTS CORP., 1440 Broadway, New York, N. Y.

774. ROYCE TEXTILE CHEMICALS—This booklet briefly describes the leading Royce products for textile processing printing, dyeing and finishing.—ROYCE CHEMICAL COMPANY, Carlton Hill, N. J.

KNITTING . . .

800. SYNTHANE TEXTILE PARTS—Folder on laminated bobbins, pirns, headless package tubes, hosiery turning and examining forms, sizing bobbins, etc.—SYNTHANE CORP., 9 River Road, Oaks, Pa.

801. THE WILDMAN SINGLEHEAD FULL-FASHIONED HOSIERY MACHINE — Literature on

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request from the WILDMAN MFG. CO., Full-Fashioned Division, Norristown, Pa.

803. TIPS ON SEAMING NYLON STRETCH HOSIERY—Pamphlet lists in detail observations and suggestions on seaming nylon stretch hosiery prepared by Union Special as a result of findings of engineers in the field.—UNION SPECIAL MACHINE CO., 407 N. Franklin St., Chicago 10, Ill.

804. BOOKLETS ON FIDELITY MACHINES—Following booklets available: Fidelity "400," Fidelity Multi-Design Ribber, Fidelity Skein Reelers.—FACTURING CO., INC., Farrand St., Bloomfield, N. J.

808. REINER WARPER—Full width and sectional warpers for all requirements in the knitting and weaving industry fully described in recent catalog.—ROBERT REINER, INC., Weehawken, N. J.

818. MILTON LIGHT METAL BEAMS FOR EVERY APPLICATION — Catalog 45-A describing Light Metal Tricot Beams made in Standard and Special sizes plus Special Purpose Light Metal Textile Equipment.—MILTON MACHINE WORKS, INC., Milton, Pa.

828. THE KIDDE KNITTER—Bulletin describing the newest in Raschel-type warp knitting machine and higher production attained with it.—KIDDE MANUFACTURING CO., INC., Bloomfield, N. J.

SEWING MACHINES . . .

924. BUTT-TACKING SEWING MACHINE — Booklet describes an operating installation of the Merrow single thread butt-tacking sewing machine. Gives performance data, and advantages of butt-tacking.—THE MERROW MACHINE COMPANY, 28 Laurel Street, Hartford, Conn.

MATERIALS HANDLING . . .

1003. CASTERS AND WHEELS—192 pages, describing casters and wheels suitable for all types of industrial applications. Every mechanical engineer and purchasing agent should have this. — DARNELL CORP., LTD., Long Beach 4, Calif.

1006. LANE CANVAS BASKETS—16-page illustrated booklet describing the Lane line of canvas baskets for textile use.—W. T. LANE & BROTHERS, Poughkeepsie, N. Y.

1007. OVERHEAD HANDLING EQUIPMENT—56 pages of illustrations showing successful applications of monorail systems to meet every kind of handling problem.—THE AMERICAN MONORAIL CO., 13106 Athens Ave., Cleveland 7, Ohio.

1008. CASTERS AND WHEELS—An illustrated booklet with complete specifications showing a complete assortment of Cotton Textile Casters.—THE COLSON CORP., Elyria, Ohio.

1009. HOW TO TEST CORRUGATED BOXES—24-page booklet offers a comprehensive check-list by which to judge the protective qualities and durability of specific corrugated boxes.—HINDE AND DAUCH, Sandusky, Ohio.

1010. CONVEYOR KEY BOOK—A guide to production "step-ups" now possible with modern conveying. Shows time-and-effort savings. Well-illustrated with photos showing plant layouts and sketches showing where, how and why different types of conveyors are used for maximum results.—LOGAN CO., 1115 Franklin St., Louisville, Ky.

1018. BALL BEARING TROLLEYS—20-page catalog by Link Belt describes entirely new line of ball bearing trolleys for overhead conveyors. Contains pictures, specifications charts and diagrams.—LINK-BELT CO., 307 North Michigan Ave., Chicago 1, Illinois.

1019. HOW TO SELECT A LIFT TRUCK—An equipment analysis guide and rating table has been introduced by Hyster for comparison and selection of fork lift trucks. Gives an excellent means for price comparison between trucks of a similar nature.—HYSTER CO., 2902 N. E. Clackamas St., Portland 8, Oregon.

1021. CORRUGATED CONTAINERS—Brochure by Gaylord describes Multi-Unit and Bulk Containers which have been adapted for the textile field.—GAYLORD CONTAINER CORP., 111 N. 4th St., St. Louis 2, Mo.

1030. CDF RECEPTACLES—This 32-page catalog R-11, profusely illustrated in color, shows Continental-Diamond's line of boxes, trucks, cans, barrels, baskets and trays. Complete description and specifications are given on each item.—CONTINENTAL-DIAMOND FIBRE CO., Newark 11, Del.

1102. BALING PRESSES—An illustrated folder describing this manufacturer's complete line of balers for all materials. Both downstroke and upstroke models.—ECONOMY BALER CO., Ann Arbor, Mich.

1103. UNBRAKO SCREWS — Illustrated 16-page booklet No. 570 gives data on Unbrako hollow set screws, with knurled point, self-locking features. Includes miscellaneous screw and locking nut data.—STANDARD PRESSED STEEL CO., Jenkintown, Pa.

1105. SHADOGRAPH WEIGHING DEVICES—Bulletins describe scales for weighing dyestuffs, cotton samples, wool yarn, cones of yarn. Pictures and complete information on each type of scale included.—EXACT WEIGHT SCALE CO., Columbus 8, Ohio.

1111. BRUSHES—A 26-page booklet is now available which describes and illustrates this manufacturer's line of brushes for the textile industry.—GASTONIA BRUSH COMPANY, Gastonia, N. C.

1112. THE RANDOM WEB PROCESS—Bulletin No. 101 describes the Rando-Webber and Rando-Feeder machines, and discusses the origin and development of the Random Web process which produces a non-oriented web suitable for processing into felts, wadding, heavy mats and non-woven fabrics on a continuous basis. Engineering data and cutaway diagrams.—CURLATOR CORPORATION, Textile Division, 565 Blossom Rd., Rochester, N. Y.

1113. MACHINE KNIVES — Catalog and price sheets describing this company's line of knives for use on textile machinery.—TAYLOR-STILES & CO., 21 Bridge St., Riegelsville, N. J.

1115. TEXTILE WRAPPING MACHINES—Brochure describing automatic wrapping machines for various types of textile products, including the new Hayssen V-Type Underfold, most protective package made.—HAYSSEN MANUFACTURING CO., Sheboygan, Wisconsin.

1122. BALING PRESSES—Bulletins available describing this company's line of motor-driven and hydraulic baling presses for finished goods, textile fibers, wool, and waste of all kinds.—LOGEMANN BROTHERS CO., 3150 West Burleigh St., Milwaukee, Wis.

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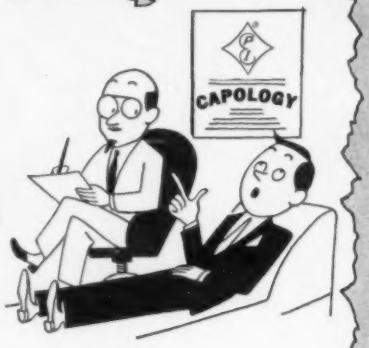

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Personal NOTES ABOUT MEN YOU KNOW

(Continued from page 46)

Edgar L. Henderson, controller; **Frank A. Norman**, treasurer; and **Morgan S. Cantey**, secretary. All three men have headquarters at West Point.

After 15 years in the engineering department of Alexander Smith, Inc., **William F. Quinn** resigned to become staff engineer with the Walter Kidde Constructors, Inc., in New York City.

D. W. Ramsey, formerly with Cinderella Knitting Mills, Inc., has been appointed quality control and sales coordinator for J. E. Morgan Knitting Mills.

David L. Haskell, who has been with Tennessee Knitting Mills, Inc., more than 35 years, has been elected vice-president in charge of finance. **A. Wilcher**, who has been with the firm over 24 years, is now vice-president in charge of domestic and overseas operations.

Chairman of the board of Texas Textile Mills is **Joseph W. Valentine**, president of J. W. Valentine Co. of New York. President is **Bryan C. Miller**; **Darrell E. Knox** is secretary and treasurer; and **Carl C. Buchanan** is assistant secretary, treasurer, and comptroller.

Obituaries

John T. Bradley, 55, retired treasurer of Monomac Spinning Co., Lawrence, Mass.

David Clark, chairman of the board of Clark Publishing Co., Charlotte, N. C., and director of Locke Cotton Mills Co. and Randolph Mills, Inc.

Arthur R. Fisher, 68, treasurer and director of Cleveland (Ohio) Worsted Mills Co.

Robert E. Henry, 75, retired vice-president of J. P. Stevens & Co., Inc., and former president of the American Cotton Manufacturers Association.

R. Edward Ives, 63, former plant superintendent of Bethayres Knitting Mills, Philadelphia, Pa.

James S. Johnston, 94, formerly machinist and millwright with Utica (N. Y.) Knitting Co.

James P. McLeod, Jr., 33, sales representative for U. S. Bobbin & Shuttle Co., Greenville, S. C.

Roger J. Rock, 81, retired treasurer and member of the board of Oneita Knitting Mills, Utica, N. Y.

Herbert Rottenberg, 60, New York knitted fabric designer and technician, formerly with Levi & Rottenberg.

W. Lee Smith, 70, president of Todd-Smith Banding Co., Charlotte, N. C.

Daniel Tower, 39, curator of the Old Slater Mill Museum, Pawtucket, R. I.

Lawrence F. Webb, 55, owner of hosiery mill at Englewood, Tenn.

Henry J. Wilkinson, 64, retired manager of Charlottesville (Va.) Woolen Mills.

Joseph Wojcicki, 42, overseer at Amoskeag-Lawrence Mills, Manchester, N. H.

J. W. Woolen, 63, general superintendent of Adams-Millis Corp.'s plant at Kernersville, N. C.

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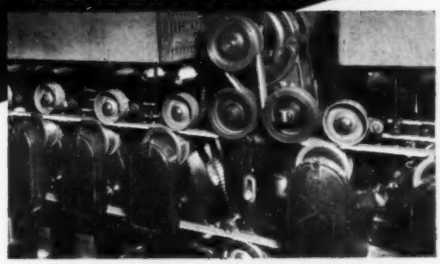

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What the TEXTILE MILLS are doing

Alamance Industries, Inc., has received a patent on a method of twisting light denier nylon yarn to give it stretch without application of heat. Only Chester H. Roth Co.'s plants are utilizing this new throwing operation at present, but licensing of other throwsters is planned for the future.

Upon completion of installation of a number of new 400-needle seamless hosiery knitting machines, production capacity of **Alba Hosiery Mills, Inc.,** Valdese, N. C., will be 20 per cent greater, and it is anticipated that about 100 more operatives will be required. Space for the additional seamless machines was acquired by removing from the plant obsolete full-fashioned machinery which had been idle for several years.

Apponaug (R. I.) Co. has applied for patent on a new process called "Dynascope," by which anything tnat can be photographed in black and white or color can be machine printed on textiles. Design possibilities with the new process, which involves a new machine printing technique, a new method of engraving, and use of new dyestuffs, are said to be limitless.

Manufacture of combed cotton yarns at the **Charles H. Bacon Co.** Lenoir City, Tenn., plant has been discontinued and cotton yarn spinning equipment disposed of. Plans are to utilize the space gained by removal of this machinery for certain phases of the Lenoir City circular hosiery knitting operation.

The 165,000 sq ft of floor space in buildings formerly occupied by Grosvenordale Mills in Thomaston, Conn., have been acquired by **Belding Heminway Co., Inc.,** for establishment of a thread manufacturing plant to replace the Belding Corticelli Putnam, Conn., mill destroyed by the flood last summer.

Landrum (S. C.) Mills, Inc., will be established by **Bigelow-Sanford Carpet Co., Inc.,** to produce velvet carpets. Looms formerly used in Bigelow-Sanford's Amsterdam, N. Y., plant will be utilized in the new mill when the building is completed the

latter part of this year. It is estimated that between 400 and 500 persons will be employed.

Bradford (R. I.) Dyeing Association (U.S.A.) has announced removal of its New York City office from 40 Worth St., to 108 W. 39th St. The new quarters are nearly twice as large and contribute to greater efficiency and convenience for company and customers.

Bama Mills has opened a pilot plant to produce elastic braid and webbing for the underwear and sportswear trades at 1065 E. 16th St., Hialeah, Fla., headed by Herman Adlman.

326 residents of Calhoun Falls, S. C., recently received certificates of completion of a course designed "to promote the American and true democratic way of life; to emphasize the values of spiritual, Christian living; to bring about a common understanding of the problems of all—through the ranks of workers and to the problems of the executives and owners of the mill; to show that the problem of one is the problem of all." Conducted by a consultant employed specifically for that purpose by **Calhoun Mills,** the five-week series of classes was free to every employee and family in the community. Also, operatives could attend the sessions "on company time."

A new line of vinyl coated fabrics for the shoe manufacturing industry has been introduced by **Goodall Fabrics,** a member of Burlington Industries. Linings, bias bindings, and upper stocks are included.

The 50th anniversary of **Callaway Mills Co.'s Elm City Plant** was observed on Nov. 15, 1955. An entire edition of the "Callaway Beacon," which commemorated the founding of this second Callaway mill in LaGrange, Ga., featured early newspaper items and photographs of the founders and employees.

Because of the confusion caused by similarity of name between **Haywood Woolen Co.** and **Hayward-Schuster Woolen Mills,** both of East Douglas, Mass., the former company has changed its name to **Douglas Woolen Co.**

Following the death of its president, J. Raymond Ferguson, operation of the **Dublin (Pa.) Hosiery Mills, Inc.,** has ceased, and all machinery has been sold.

Esther Yarn Mill Co., Inc., has been incorporated to take over the assets of **Marion Yarn Mill** at Boiling Springs, N. C. Charles I. Dover, G. J. Vincent, and Joseph C. Whisnant are incorporators.

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MARCH OF DIMES

January 3 to 31

A series of technical seminars is being held at **Fieldcrest Mills** for the purpose of providing periodic communication between Fieldcrest engineers, learning of new technical developments useful to the company, and enabling the engineers to achieve individual professional growth. Walter J. Seeley, dean of the Duke University College of Engineering, addressed the first meeting at Ridgeway, Va. Seminars are planned at six-weeks intervals.

A $200,000 expansion program is under way at **Florence (Ala.) Cotton Mills.** Upon completion about April 1, production will be increased by 20 per cent through the addition of 16,000 sq ft of floor space and new machinery.

General Spinning Corp., a new company formed for the manufacture of yarn on the woolen system, has started operations at 256 Market St., Lowell, Mass. Officers of the company include Lawrence F. Ellis, president; Albert T. Woidzik, general manager; and Michael J. Koroskys, technical director.

The proposed merger of **Alexander Smith, Inc.,** and **Mohawk Carpet Mills, Inc.,** was presented to stockholders of both companies for ratification late in December. **Masco Industries, Inc.,** is the name planned for the new parent organization, with two divisions designated as Alexander Smith, Inc., and Mohawk Carpet Mills, Inc. The production of Axminster carpets and rugs at the Greenville (Miss.) Mills is expected to be accelerated as it is contemplated that the plant there will produce sufficient Axminster goods for both companies. In turn, the Amsterdam,

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What the TEXTILE MILLS are doing

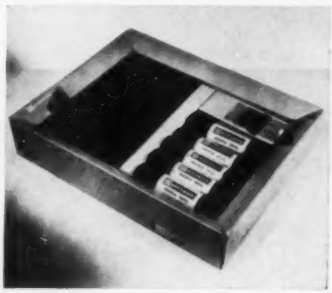
N. Y., plant of Mohawk will provide Alexander Smith with enough Wilton carpet to meet its sales demands. In addition to the Axminster, Wilton, and velvet production, the merger will give Smith tufted mill facilities at Dillon, S. C., enabling the Smith sales force to have a complete line of goods to offer customers.

Model Dye Southern, Inc., a new Sumter, S. C., mill, started top dyeing, printing, and recombing operations last month.

National Textile Processing Co. of New Bedford, Mass., recently moved from 50 Grit St. to new and larger quarters formerly occupied by Gosnold Mills on Orchard St.

The George A. Horvath interests of New York recently purchased **Neisler Mills, Inc.; Belmont Cotton Mills Co.,** Shelby, N. C.; **Palmetto Yarn Mills, Inc.;** and **Mayo Mills, Inc.** Management at the mills will remain the same, and no change in manufacturing or marketing is contemplated.

Prepackaging in sets has increased yarn sales for **Spinnerin Yarn Co., Inc.** An unusual see-through folding carton containing a finished knit wool skirt plus sufficient blended tweed



wool yarn to make one of four different styles of blouses is being marketed by the mill to appeal to women who don't wish to spend the time required to make a complete suit.

Included in the expansion program of **Wiscassett Mills Co.** is the construction of a 13,000 sq ft, two-story addition to provide for rearrangement of equipment at the No. 6 mill in Albemarle, N. C.

Newburgh (N. Y.) Printing and Finishing Co., is the new name of the former **Newburgh Bleachery** recently taken over by Julius Rutberg, president of the Ramapo Piece Dye Works plant in Sloatburg, N. Y., which was completely destroyed by fire several months ago.

The **Palmetto (Ga.) Cotton Mills** is again in operation, having been acquired by Linway Manufacturing Co. of Atlanta, a newly formed concern. Twisters have been installed for making plied yarns.

Pendleton Woolen Mills plan to build a new plant at Portland, Ore., this year.

Effective Jan. 1 **Portland (Ore.) Woolen Mills** discontinued the production of blankets. Equipment is being converted for the manufacture of coatings, tweeds, and other apparel fabrics.

Huntsville Manufacturing Co.'s contribution to the progress of Huntsville, Ala., now in its sesquicentennial year, was recently reviewed in a special historical edition of "The Huntsville Parker," the company's employee publication. "The collection of material for this history was begun with the hope of putting into writing the story of our plant's beginning and the subsequent years of its history while it is still possible for us to hear this story from those who experienced the events recorded herein," said Editor Sarah Huff Fisk in her foreword to this special edition. "It is a very moving and wonderful story—not just the construction of a plant and village, but the living story of the development of a successful industry and a thriving community. . . . In this work, the early years of the plant's history have been covered in more detail than later years, as the happenings of these first years are the least known now, and, therefore, of the most interest."

Soule Mill, New Bedford, Mass., has been acquired by United Industrial Investment Corp.

The thread finishing plants of **Max Pollack & Co., Inc.** at Groton and Willimantic, Conn., have been bought by Threads-Inc., a subsidiary of **Textiles, Inc.,** of Gastonia, N. C. Having the same officers as the new owner, the New England plants are known as Max Pollack & Company.

Westwood Textile Manufacturing Co. is a new concern now in operation in the former Ames Textile Corp. plant in Southbridge, Mass.

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SUPPLIERS News

WHAT THEY ARE DOING

J. Fred Timms, Greenhill Road, Spartanburg, S. C., is now representative in the Carolinas for the products of **Allen Beam Co.** Mr. Timms had previously been overseer of warping at Spartan Mills.

National Aniline Division of Allied Chemical & Dye Corp. has appointed William E. Jennings manager of its fiber application research laboratory at the Chesterfield Plant in Hopewell, Va. * * * William H. Metzger has been named sales and service representative for "Caprolan" nylon in Pennsylvania, Delaware, Maryland, and West Virginia.

John W. Becker, sales representative for **Allis-Chalmers Industries Group** in Syracuse, N. Y., since 1951, has been named manager of that district. He replaces A. J. Mestier, Jr., who was recently named manager of the Detroit district.

Everton H. Loveless, formerly a salesman in the Providence, R. I., office of **American Viscose Corp.,** has been promoted to sales representative for rayon filament yarn in the New York office.

Arnold, Hoffman & Co. has announced the appointment of Raymond Thornton as technical service manager to replace Arthur C. Merrill, Jr., who has been assigned to special duties with the commercial division.

Albert L. Shutts has been promoted to manager of the New York territory of **Becco Chemical Division,** Food Machinery and Chemical Corp. Mr. Shutts was formerly in charge of sales and customer service in that area.

Darius R. Barber, formerly of Vulcan Copper & Supply Co., has been appointed controller of **Brush Electronics Co.**

Canton Stoker Corp. has purchased the assets of Wagener Steam Pump Co., also of Canton, Ohio.

The Chemical Division of **Celanese Corp. of America** has opened a new chemical storage terminal at Newark, N. J., as an eastern distribution center for liquid and dry chemicals produced by the company. Initial capacity is 4,000,000 gallons of liquid chemicals, and 1,000,000 pounds of dry products, with additional drumming capacity.

W. Lamar Poole has been appointed to represent **Bryant Chemical Corp.** in North Carolina and Virginia. For the past five years Mr. Pool has been connected with Almardon Mills at Lonsdale, R. I.

Mr. Poole

Sales manager of the textile division of **Curlator Corp.** is Gordon B. Harvey, formerly general manager of the nonwoven fabrics division of Star Woolen Co. His headquarters are in Rochester, N. Y.

Curtis & Marble Machine Co. recently announced the transfer of Thure Bylund from its plant at Worcester, Mass., to the sales office in Greenville, S. C.

Olin D. Blessing, sales manager of **Dow Corning Corp.,** has been made a vice-president of the company. Mr. Blessing was Dow Corning's first full-time employee when the company was founded in 1943.

Century Electric Co. of St. Louis has opened a new district office in Jacksonville, Florida, headed by Burton E. Tebo, formerly of the Atlanta, Ga., branch office.

The American Chemical Society's Division of History of Chemistry honored its secretary, Sidney M. Edelstein, **Dexter Chemical Corp.,** by presenting him a medal commemorating the 100th anniversary of Lie-

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SUPPLIERS News — WHAT THEY ARE DOING

big's work in organic chemistry at Giesen. Mr. Edelstein, who is now in his eighth term of office, added the medal to his library, which is considered the finest privately owned collection on dyeing and related chemical subjects.

Wilton Todd, 121 N. Laurel Ave., Charlotte, N. C., has been named sales representative of **Cole Engineering Corp.** in charge of the Carolinas division. Mr. Todd was formerly general superintendent of the grey division of Montreal Cottons, Ltd.

Mr. Todd

Arthur M. Kiely has been elected treasurer of **Buffalo Forge Co.** Mr. Kiely, who has been with the company since 1930, is also a vice-president and a director.

Newest link in the **Ciba Co.'s** program to consolidate, modernize, staff and equip all of its branch office facilities for the growing needs of customers is the modern structure just completed at Rumford, R. I., for New England sales and services.

J. William Kelly has been appointed sales manager of the electric truck section of **Clark Equipment Co.'s** Industrial Truck Division.

Hyster Company has promoted Harold R. Lucas to the position of manager of its new merchandise division of the general sales department.

Vincent V. Tivy has been appointed chief application engineer for **The Foxboro Company,** responsible for coordinating sales engineering with product development and production engineering activities.

Robert Gair Company, Inc., is starting construction early this year on a new 92,500 sq ft shipping container plant on a 23-acre site on Emery Avenue in Cleveland, Ohio. Completion is scheduled for November.

Oliver D. Landis, Inc., Charlotte, N. C., is now exclusive representative in the southern territory for the card clothing line of A. B. Kardbeslag, Norrkoping, Sweden.

Mr. Landis

Construction is under way on a $3,500,000 addition to **Goodyear Tire & Rubber Co.'s** Chemigum plant at Akron, Ohio. The new facilities, part of the company's $100,000,000 expansion program, will increase production of nitrile rubbers, latices, and Pliolite resins.

Open house was recently held at the Rome, Ga., plant of **Celanese Corporation of America** when the commercial production of Fortisan-36, a new super-strong industrial fiber, was begun (see TI Aug. '55, p. 106 and Oct. '55, p. 193). The new fiber has been evaluated by potential customers in several different industries; potential fields are for V-belts, power transmission belting, high pressure hose, conveyor belts, truck tires, plastic laminates, fibers, paper reinforcement, oil hose, and tarpaulins. Fortisan-36 initially is available in 800 and 1600 denier continuous filament.

Marian Romer has joined the merchandising division of **Industrial Rayon Corp.** to engage in market development and fabric creation activities in the floor covering and decorative fabrics field. Mr. Romer was previously with James Lees & Sons Co. and with Alexander Smith, Inc.

Jacobson Nut Mfg. Corp. is building a new plant on Mark Road, Kenilworth, N. J.

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Francis X. Minich has joined **Metro-Atlantic, Inc.,** as representative in sales and technical service in

Mr. Minich

Georgia and Alabama. Mr. Minich was formerly production manager of Southern Weaving Co. at Greenville, S. C.

McDonough (Ga.) Foundry & Machine Co. has become the **Machine & Foundry Division of McDonough Power Equipment, Inc.** The address remains the same, and the concern continues to serve textile mills as heretofore under the direction of John L. Sinback who has become vice-president and general manager of the Machine & Foundry Division. The name change occurred upon joining of forces of McDonough Foundry & Machine with Southern Saw Works of East Point, Ga., 65-year-old manufacturer of power implements. An expansion program is underway in McDonough which will supply 58,000 sq ft additional manufacturing and office space.

J. Houston Barnes, Burlington, N. C., has joined **John P. Maguire & Co., Inc.,** to cover the southern territory.

Clarence S. Sikes has been named assistant manager of the Spindle Division of **The Marquette Metal Products Co.** He is stationed at the company's home office in Cleveland, Ohio.

Monsanto Chemical Co.'s plastics division has promoted Edmond S. Bauer to assistant director of sales for resin products, and Thomas W. Sears to sales manager for industrial resins. Mr. Bauer is responsible for the sale of textile resins.

Onyx Oil & Chemical Co. has announced the appointment of Henry A. Molteni as plant manager in charge of all plant operations. Paul D. Jacobs has been named group leader of the textile application section of the company's research and

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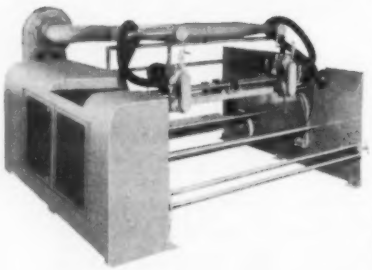

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Hawthorne, New Jersey

SUPPLIERS News
WHAT THEY ARE DOING

development laboratories. Now covering the west coast territory as sales representative for Onyx is George McCarty, with headquarters at 2321 Yates St., Los Angeles, Calif.

New vice-presidents of **Nopco Chemical Co.** are Harry A. Batley, who is in charge of industrial production; and Walter B. Morehouse, in charge of all the industrial sales divisions of the company.

New sales staff manager of **Pneumafil Corp.** at Charlotte, N. C., is G.

Mr. Parker

Stewart Parker, who was formerly general manager of A. K. Sutton Co.

Harry E. New, formerly with The Chemstrand Corp., has been elected president and treasurer of **Palmetto Steel & Machine Co.** in Greenville, S. C.

Pittsburgh Corning Corp. has appointed Walter Lovett as manager of its newly created technical service department at the company's headquarters in Pittsburgh, Pa.

Pittsburgh Plate Glass Co. will break ground early this year for construction of a multi-million dollar window glass producing plant on an 80-acre site at Decatur, Ill.

Reynolds Metals Co. has employed Miss Leonie McLaughlin as consultant on styling and merchandising aluminum yarn, which is widely used in the current Indian-Oriental trend in fashions. Miss McLaughlin is noted for her pioneering work with fashion fabrics, having developed the first nylon tulle in 1945.

Shipment of spinning frames for the first American installation in Holland has been completed by **Roberts Company** of Sanford, N. C. Thirteen modernized Roberts model 55R high draft spinning frames were purchased to comprise all spinning for the yarn production in the Dutch mill. The frames were crated and shipped in a nearly erected condition to facilitate installation. The mill will produce combed yarns for poplins

Mr. Oliver

and handkerchiefs. * * * Carlton E. Oliver, who joined the company in 1951 after several years with Allen Beam Co., has been named a sales engineer for the spinning machinery division.

Joseph T. Ryerson & Son, Inc., has acquired an 11½-acre site near Charlotte at Pinoca, N. C., for the erection of a large steel service plant.

Republic Steel Corp. is building a 75,000 sq ft warehouse in Charlotte, N. C., with completion scheduled for this spring. The new facilities will staff about 55 employees to serve the Carolinas and part of Georgia.

Wesley E. Timmcke, 1335 La Vista Road, N.E., Atlanta, Ga., is now

Mr. Timmcke

southern regional manager for **Warner Electric Brake & Clutch Co.**

Facilities have been doubled at the Atlanta, Ga., headquarters of **Wrenn Brothers** with the opening of a recently completed warehouse and office at 1145 Zonolite Road, N. E.

Seydell-Woolley & Company, Atlanta, Ga., has doubled the size of its laboratory and is adding chemists and other technical personnel to increase its development and research program in the fields of warp sizing and finishing.

Effective Jan. 1, Edwin R. Broden became president and chief executive officer of **SKF Industries, Inc.**, succeeding Richard H. DeMott, chairman of the board. At the same time, Allen T. Shoener assumed the duties of treasurer.

Benzonitrile, latest addition to **Tennessee Products & Chemical Corp.'s** organic chemicals for textile application, is now available in developmental quantities. It is being produced at the company's Chattanooga, Tenn., pilot plant. Requests for samples and other data may be addressed to the general headquarters in the First American National Bank Bldg. at Nashville, Tenn.

Van Vlaanderen Machine Co. has appointed William E. Stubbins as its

Mr. Stubbins

New England representative. His office is at 211 W. Exchange St., Providence, R. I.

Texize Chemicals, Inc., of Greenville, S. C., has purchased the Rite Manufacturing Co. plant in Mauldin for expanded operations.

Edward G. Glover has been elected president of **Textile Mill Supply Co.**, Charlotte, N. C., to fill the vacancy created when J. H. Bobbitt became chairman of the board. Other officers are: F. A. Hipp, vice-president and sales manager; R. G. Spratt, vice-president, and Albert K. Glover, secretary-treasurer.

Calvin C. Toney is now covering all of South Carolina and western North Carolina as representative for **Textile Specialty Co.**, with headquarters in Clemson, S. C.

Alfred Greenfield is now director of the fabric development department of the fiber division, **Virginia-Carolina Chemical Corp.** He is responsible for layout and styling applicable to Vicara blended fabrics and their merchandising functions.

William Brackett, formerly field technical representative of Devoe and Raynolds Co., Louisville, Ky., has been transferred to **Truscon Laboratories Division** to cover the New Orleans territory which includes Louisiana, Alabama, Mississippi, and Arkansas.

Following the resignation of Charles D. Brooks as president of **U. S. Bobbin & Shuttle Co.**, Jack Locke has been appointed executive vice-president and general manager. * * * Elevated to the presidency of the company's subsidiary, Acrometal Products, Inc., is Fred J. Bieber who was formerly vice-president and general manager of Acrometal.

An Executive Views the News in Textiles

(Continued from page 71)

sentiment and to weigh the chances of either administrative or congressional action in imposing quotas against Japanese goods.

We feel pretty certain in saying that the Japanese went back to their country with the opinion that the American textile industry was going to win its fight one way or the other, and that either the Administration or Congress would impose definite and specific quotas against Japanese goods. This was the last thing the Japanese wanted, and in their shrewdness they decided that the best sort of move they could make would be to impose quotas of their own and thus blunt the drive which was being made for legally imposed restrictions.

By the time these words appear in print, the die may be cast and the Rubicon may have been crossed; nevertheless, we have the very deep feeling that the Japanese-imposed quotas will remain in effect only so long as they suit the convenience of the Japanese textile industry. Whatever lasting relief the American industry is going to get will have to come from a long-range program controlled by the American Government, or the American Congress. To put the fate of a major American industry in the hands of its Japanese

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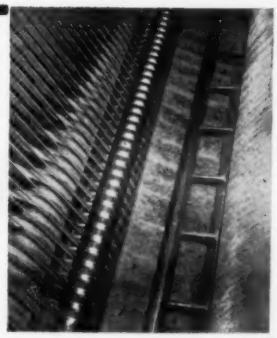

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competition would be both foolhardy and ill-advised.

The New Year

No man knoweth what 1956 holds in store for the textile industry, but if it contains as many surprises as did 1955, it may (to paraphrase the song) be a worry, but it certainly is not going to be a bore!

Hints on Dyeing and Finishing Acrilan

(Continued from page 130)

additional half gram per liter Textone is added and bleaching is continued for an additional 15 minutes.

After bleaching the bath is dropped and the goods are treated for 10 minutes in 2 g/l phosphoric acid at 140 F. At the expiration of this treatment the goods are rinsed and antichlored in 1 g/l sodium bisulfite and 1 g/l sodium bicarbonate for 20 minutes at 140 F.

A point of great importance is that the goods should be completely neutralized in the antichlor treatment for the dual purpose of obtaining maximum elasticity of cuffs, waistbands, and collars and also optimum utilization of finish used in the final operation. At the conclusion of the antichlor step, the goods are rinsed and may then be finished by using one of a considerable number of cationic finishing materials.

Finishing. Those finishes tested so far on Acrilan giving excellent results include: Sapamine OC (Ciba), Velvatole MS (Quaker), Ahcovel A (Arnold-Hoffman), and Softex No. 596 (Houghton). These materials have also been found to maintain optimum color of the white and are not affected by Fade-Ometer exposure. Sapamine OC and Velvatole MS produce the best hand when applied at a pH of 8 using from 2 - 4% on weight of goods of the finishing material at a temperature of 140 F for 20 minutes. After the goods are withdrawn from the bath they should be lightly extracted and tumbler dried at a temperature not over 175 F.

Complete neutralization of the acid used in acid dyeing techniques has also been found to be of importance in eliminating excessive shrinkage, obtaining maximum elasticity of cuffs, collars, and waistbands, and in obtaining the same softness of hand as on goods dyed by non-acid techniques.

Crush Marks. In the finishing field, a method for the elimination of crack marks, which are prone to occur during the dyeing of any acrylic sweater knitgoods, has been determined. The importance of cooling back slowly at the conclusion of the dyeing operation had been strongly stressed previously, but in cases where the goods, for a variety of reasons, had become tangled the cooling step in itself was not sufficient to remove completely the cracked condition.

It has now been shown that if goods containing evidence of a cracked condition are given a dry heat treatment in a conventional tumbler dryer at a temperature of from 215 F to 220 F for from 20 to 30 minutes, the crack marks can be completely eliminated.

Stripping and Redyeing Acrilan Sweaters. For a variety of reasons from time to time it becomes necessary to either remove dyestuff from the fiber or to effect further leveling by re-transference of color and in this respect Acrilan lends itself well to commercial requirements.

Where basic dyestuffs are concerned, it has been found that a treatment at the boil in 2 g/l Lissolamine A or V (Arnold-Hoffman) and 2 g/l sulfuric acid will remove virtually all the coloring matter. When the goods have been dyed with acetate dyestuffs a similar treatment using a non-ionic, such as Igepal CTA, to the extent of 2 g/l in conjunction with 2 g/l sulfuric acid at the boil will evenly remove a very great proportion of the dyestuff. After the above treatments the goods should be neutralized with bicarbonate, rebagged and redyed.

It has been found that the above stripping techniques materially accelerate the dyeing rate, and it is important to control carefully the rate of temperature increase in the opening stages of the redyeing operation to prevent too rapid a strike.

Magical Black Light Ends Color Matching Rejects

Here at last is a method that takes the guesswork out of color matching—and eliminates rejects. Blak-Ray black light clearly reveals even the slightest variations in color tones, as well as fibre contamination. Result: yarn and fabric manufacturers—spinners, weavers, knitters, finishers, bleachers, printers and throwsters—are fast adopting the Blak-Ray system.

Full details are given in new case History #111X, available free from the Black Light Corporation of America, Distributors for Ultra-Violet Products, Inc.

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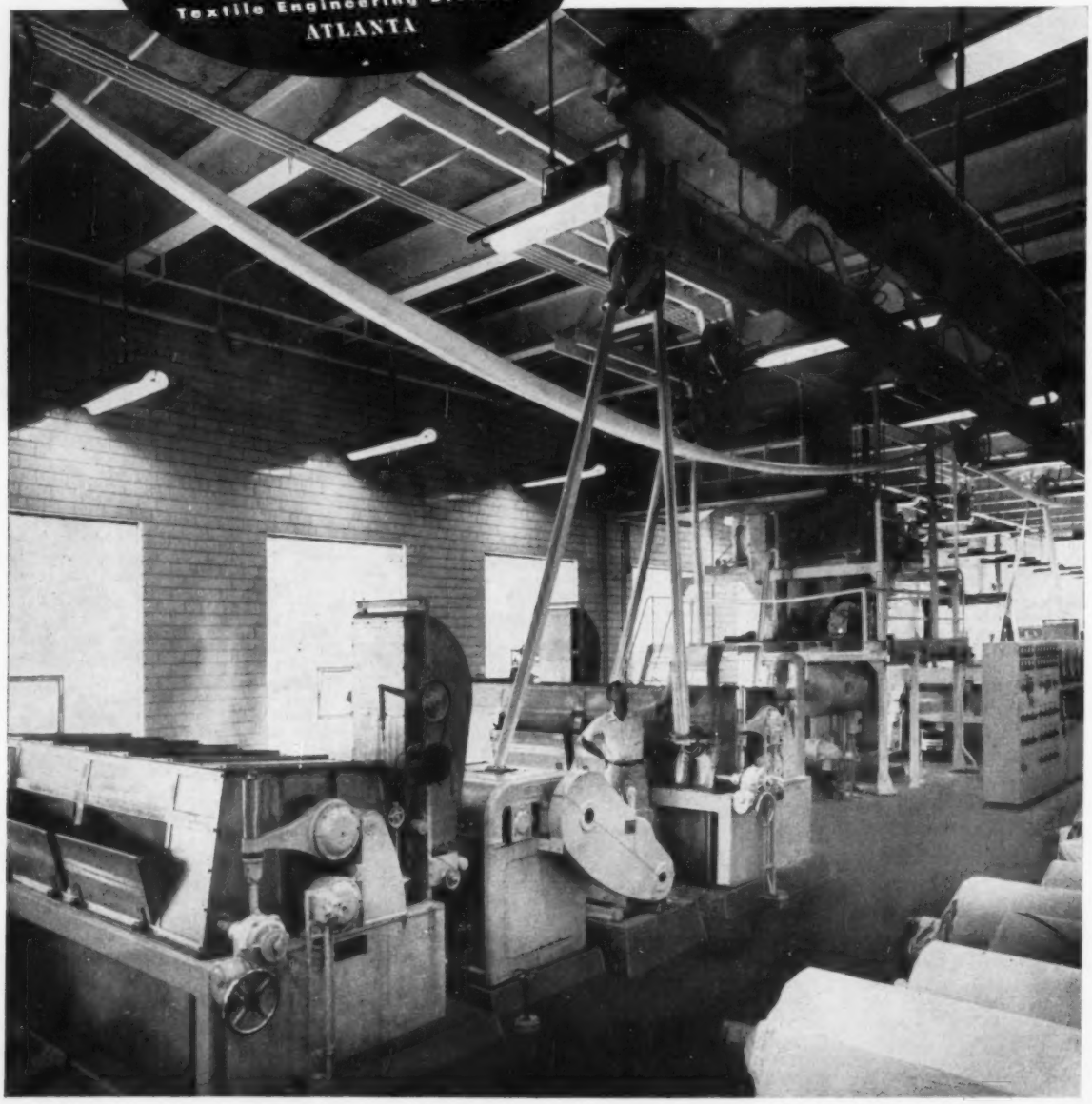

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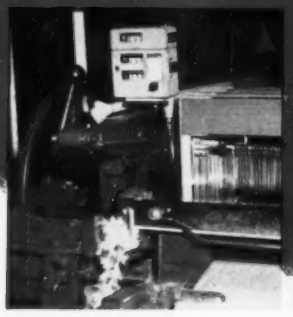
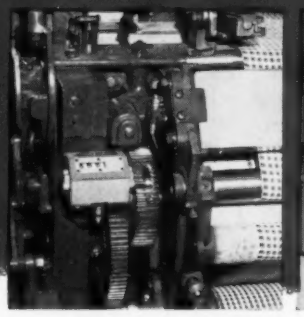


2-3-4 Pick Counter on Loom



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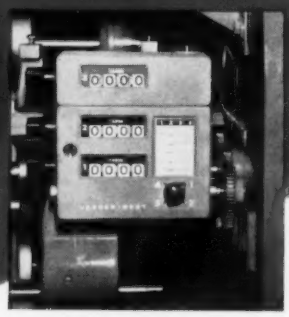

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